

UNITED STATES DISTRICT COURT
SOUTHERN DISTRICT OF NEW YORK

In re Terrorist Attacks on September 11, 2001	03 MDL 1570 (GBD)(SN) ECF Case
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This document relates to:

Ashton, et al. v. al Qaeda Islamic Army, et al., 02-cv-6977 (GBD)(SN)

**DECLARATION OF PLAINTIFF PATRICIA RYAN IN SUPPORT
OF DEFAULT JUDGMENT APPLICATION AGAINST THE TALIBAN**

Patricia Ryan, pursuant to 28 U.S.C. § 1746, declares under the penalty of perjury under the laws of the United States of America, that the following is true and correct:

1. I am the court-appointed personal representative of the Estate of John J. Ryan, Jr., who perished at the World Trade Center as a result of the terrorist attacks on September 11, 2001.
2. I submit this Declaration on my own behalf as the surviving spouse of John J. Ryan, Jr., and on behalf of the only other New Jersey State designated “heirs” of my late husband, our three children: Colin Ryan, Kristen Ryan and Laura Ryan.
3. I can affirm to the Court that my deceased husband lived with me and my three children at a private home at 53 Ellsworth Drive, W. Windsor, New Jersey 08550, at the time of his death. I can further affirm that my children and I were the only “immediate family members” living with my husband and that no other family member lived with us (or was dependent on my husband – financially or emotionally) at the time of his death.
4. For the foregoing reasons, I ask that the Court to deem my children and me as the only “immediate family members” of John J. Ryan, Jr.

5. My attorney (John F. Schutty) has advised me that under New Jersey State estate administration law, when a decedent is survived by a spouse and children, they are considered the decedent's only "legal heirs" (New Jersey estate administration law explicitly denies parents and siblings of a decedent any wrongful death damages under such circumstances).

6. I was originally unaware that my ex-in-laws (my deceased husband's parents and siblings) had filed lawsuits (separate apart from mine) for alleged wrongful death damages sustained as a result of my husband's death.

7. My attorney only recently completed a search of the MDL docket and advised me about the substantial wrongful death damages that were awarded against the Islamic Republic of Iran ("Iran") and in favor of my ex-in-laws.

8. I was dismayed to learn how large the awards were to my ex-in-laws and even more dismayed to learn how these judgments affected/reduced the distribution of money from the U.S. Victims of State Sponsored Terrorism Fund ("USVSST") to me and my children.

9. Here is what my attorney has told me about the default judgments that were awarded to my ex-in-laws against Iran:

Non-Legal Heirs of John J. Ryan, Jr. Awarded Solatium Damages Against Iran				
Date Action Filed	Action	Attorneys	Name (Relation to Decedent)	Solatium Awards
12/28/2015 <i>Burnett</i> ECF#1	<i>Burnett et al. v. The Islamic Republic of Iran,</i> No. 15-cv-09903 (<i>In-laws were individually named in complaint</i>)	Motley Rice LLC	John J. Ryan (Parent-Deceased)	\$8,500,000 10/31/2016 ECF#3387
ECF#3371-1	<i>Bauer, et al. v. al Qaeda Islamic Army, et al.,</i> No. 02-cv-7236 (<i>In-laws were not individually named in complaint</i>)	Baumeister & Samuels, P.C.	Mary V. Ryan (Parent-Deceased)	\$8,500,000 10/31/2016 ECF#3387
			Colleen Ryan (Sibling-Deceased)	\$4,250,000 10/31/2016 ECF#3387
			Aileen Ryan (Sibling)	\$4,250,000 10/31/2016 ECF#3387
			Patrick Ryan (Sibling)	\$4,250,000 10/31/2016 ECF#3387
			Teague M. Ryan (Silbling)	\$4,250,000 10/31/2016 ECF#3387
Total Solatium Damages Awarded to Non-Heirs Thus Far				\$34,000,000

10. And here are the default judgment awards granted to me and my three children against Iran:

Legal Heirs of John J. Ryan, Jr. Awarded Solatium Damages Against Iran¹				
Date Action Filed	Action	Attorneys	Name (Relation to Decedent)	Solatium Awards
8/31/2015 ECF#3014	<i>Ryan, et al. v. Islamic Republic of Iran, et al.</i> , No. 20-cv-00266 (default judgment now moved to <i>Ashton</i> action by virtue of MDL ECF#8985)	Law Office of John F. Schutty P.C.	Patricia Ryan (Spouse)	\$12,500,000 2/21/2020 ECF#5999
			Colin Ryan (Child)	\$8,500,000 2/21/2020 ECF#5999
			Kristen Ryan (Child)	\$8,500,000 2/21/2020 ECF#5999
			Laura Ryan (Child)	\$8,500,000 2/21/2020 ECF#5999
Total Solatium Damages Awarded to Heirs Thus Far				\$38,000,000

11. Upon information and belief, awards against Iran were granted to non-heirs without regard to whether the statute of limitations of the Foreign Sovereign Immunities Act was satisfied (a 10-year statute of limitations). And non-heirs and heirs then proceeded into the USVSST where a limited amount of funds were available to be shared amongst claimants. Undeniably, my children and I were hurt by the award of wrongful death damages to my deceased husband's parents and siblings and resulting payments by the USVSST.

¹ The Estate of John J. Ryan, Jr. was also awarded economic loss damages of \$16,159,990 (ECF MDL#5999), but the U.S. Victims of State Sponsored Terrorism Fund ("USVSST") limited the legal heirs of my husband to a total cap of \$35 million (solatium plus economic loss damages) before our USVSST awards were calculated, while individual "immediate family members" were given a cap of \$20 million "for 9/11 family members who are not a 9/11 spouse or 9/11 dependent." What is undeniable is that the recoveries of parents and siblings necessarily decrease the Fund's assets and limit what is available to heirs. See USVSST website, FAQ 4.1, <http://www.usvsst.com/faq.php>.

12. My attorney now has advised that my ex-in-laws also have filed default judgment applications for wrongful death damages against the Taliban.

13. Below is what my attorney has advised me has been filed by the non-heirs and heirs of my deceased husband:

Non-Heirs of John J. Ryan, Jr. Who Have Requested Solatium Damages against the Taliban				
Date Action Filed	Action	Attorneys	Name (Relation to Decedent)	Solatium Awards Sought
01/20/2022 ECF#7618	<i>Burnett et al. v. The Islamic Republic of Iran</i> , No. 15-cv-09903	Motley Rice LLC	John J. Ryan (Parent-Deceased)	\$8,500,000 01/20/2022 ECF#7621
			Mary V. Ryan (Parent-Deceased)	\$8,500,000 " "
			Colleen Ryan (Sibling-Deceased)	\$4,250,000 " "
			Aileen Ryan (Sibling)	\$4,250,000 " "
			Patrick Ryan (Sibling)	\$4,250,000 " "
			Teague M. Ryan (Silbling)	\$4,250,000 " "
Total Solatium Awards Sought Against the Taliban by Non-Heirs				\$34,000,000

Legal Heirs of John J. Ryan, Jr. Seeking Solatium Damages against the Taliban				
Date Action Filed	Action	Attorneys	Name (Relation to Decedent)	Solatium Awards Sought
02/01/2022 ECF#7643	<i>Ryan, et al. v. Islamic Republic of Iran, et al.</i> , No. 20-cv-00266 (default judgment now moved to <i>Ashton</i> action by virtue of MDL ECF#8985)	Law Office of John F. Schutty P.C.	Patricia Ryan (Spouse)	\$12,500,000 02/01/2022 ECF#7644
			Colin Ryan (Child)	\$8,500,000 " "
			Kristen Ryan (Child)	\$8,500,000 " "
			Laura Ryan (Child)	\$8,500,000 " "
Total Solatium Award Sought Against the Taliban by Legal Heirs				\$38,000,000

14. Again, a limited fund of money (if any) is expected to be available to all plaintiffs making claims against the Taliban. Again, awards to non-heirs, and those who have filed untimely claims, will, at a minimum, reduce the recoveries of my children and me from the Taliban and any limited fund of money that may be available.

15. I expressly object to the Court making wrongful death awards to “non-heirs.”

16. I also object to the Court issuing awards to plaintiffs who have filed claims after the statute of limitations has expired. This Court apparently has previously determined that one wrongful death lawsuit, filed by any family member, protects any subsequent wrongful death lawsuit filed by any other family member of the decedent, against the statute of limitations. *See, e.g.*, ECF MDL#5095 at 1, 5096 at 1 and 5097 at 1. Please do not allow non-heirs to “piggy-

back” on my timely legal action, and then reduce the wrongful death damage money paid to my late husband’s estate.

Dated: New York, New York
April 2, 2023

I declare under penalty of perjury under the laws of the United States of America that the foregoing is true and correct.


Patricia Ryan

EXHIBIT B: PATRICIA RYAN DECLARATION

Estate	Immediate Family Members (Heirs)	Relationship	Solatium Damages	Conscious Pain & Suffering	Economic Loss	TOTALS
Estate of John J. Ryan	Ryan, Patricia	Spouse/PR	\$12,500,000.00	\$2,000,000.00	\$16,159,990.00	\$30,659,990.00
	Ryan, Colin	Child	\$ 8,500,000.00			\$ 8,500,000.00
	Ryan, Kristen	Child	\$ 8,500,000.00			\$ 8,500,000.00
	Ryan, Laura	Child	\$8,500,000.00			\$ 8,500,000.00
Total Judgment to Personal Representative for Entry of Partial Final Judgments Against Taliban						\$56,159,990.00

DECLARATION OF STAN SMITH

1. My name is Dr. Stan Smith. I am over 18 years of age, of sound mind and am competent to make this affidavit. I have firsthand personal knowledge of the facts stated in this affidavit, and they are true and correct.

2. I have worked as an economic and financial consultant since 1972, after completing an internship at the Federal Reserve, Board of Governors, in Washington, D.C.

3. I am a graduate of Cornell University. I received a masters' degree and my Ph.D. in economics from the University of Chicago.

4. I am a member of various economic associations and recently served for three years as Vice President of the National Association of Forensic Economics (NAFE), which is the principal association in its field. I was also an editor of the peer-reviewed journal, the *Journal of Forensic Economics*, for over a decade. I have also published scholarly articles in this journal. The *JFE* is published by the National Association of Forensic Economics and is the leading academic journal in the field of Forensic Economics.

5. I have also held teaching positions at various colleges and universities, such as the University of Chicago and DePaul University College of Law.

6. I am a member of the American Academy of Economic & Financial Experts, a Diplomat of the American Board of Disability Analysts, a Fellow and Board Certified

Forensic Examiner of the American College of Forensic Examiners, a member of the National Association of Forensic Examiners, a member of the American Economic Association, a member of the American Finance Association, and a member of the Collegium of Pecuniary Damages Experts.

7. Since 1985, I have been the president of Smith Economics Group, Ltd, consultants in Economics and Finance. I have testified for both plaintiffs and defendants, including for government clients such as the U.S. Department of Justice.

8. I have been featured in numerous national presentations, including the American Bar Association's Tort and Insurance Practice, the American Law Institute-American Bar Association, CNN, and have been profiled by both The Wall Street Journal and Who's Who in the World.

9. My work in the economic and finance fields, as well as the methodologies I employ have been accepted by courts in approximately 33 states and the District of Columbia, as well as in most Federal Circuits and several state supreme courts. My testimony has been allowed in a considerable number of cases under the *Daubert* standard as well as *Frye*, its predecessor.

10. I have been published numerous times by peer reviewed entities. As an adjunct professor, I created and taught the first course in forensic economics nationwide at DePaul University. My current *Curriculum Vita* has been attached as Exhibit 1.

11. On behalf of attorneys for the estate of John Ryan I have calculated the value of certain losses subsequent to the death of Mr. Ryan on September 11, 2001. These losses are: (1) the loss of wages and employee benefits; (2) the loss of housekeeping and home

management services; and (3) the loss of value of life, also known as the loss of enjoyment of life.

12. The losses I have calculated for the estate of John Ryan are the product of an evaluation of the available materials, and a process of applied economic reasoning. My report and testimony are offered as a tool, an aid, and a guide to assist the evaluation by others.

13. My methodology for estimating the losses, is generally based on past wage growth, interest rates, and consumer prices. The effective net discount rate using statistically average wage growth rates and statistically average discount rates is 0.25 percent.

14. The loss of wages and employee benefits and the loss of housekeeping and home management services are grown at the national average wage growth rate of 3.84 percent in 2001; 2.05 percent in 2002; 5.27 percent in 2003; 4.41 percent in 2004; 3.04 percent in 2005; 3.89 percent in 2006; 4.08 percent in 2007; 2.94 percent in 2008; 1.05 percent in 2009; 1.23 percent in 2010; 0.52 percent in 2011; 5.87 percent in 2012; zero percent in 2013; 2.57 percent in 2014; 2.46 percent in 2015; 2.14 percent in 2016; 3.01 percent in 2017; 2.92 percent in 2018; and an estimated national average wage growth rate of 3.0 percent in 2019 and 2020. My estimate of the future real wage growth rate is 1.00 percent per year. This growth rate is based on Business Sector, Hourly Compensation growth data from the Major Sector Productivity and Costs Index found at the U.S. Bureau of Labor Statistics website at www.bls.gov/data/home.htm, Series ID: PRS84006103, for the real increase in

wages primarily for the last 20 years.

15. The losses I have presented are at a net present value as of January 2020. Future losses are discounted at an estimated the real discount rate is 1.25 percent per year. My estimated of the discount rate is based on primarily the rate of return on short-term U.S. Treasury investment for the last 20 years. The data is from the statistical series H.15 Selected Interest Rates, published by the Board of Governors of the Federal Reserve System found at www.federalreserve.gov. This data is also published in the Economic Report of the President Table for "Bond yields and interest rates" for the real return on U.S. Treasury investments.

16. Estimates of real growth and discount rates are net of inflation based on the Consumer Price Index (CPI-U), published in monthly issues of the U.S. Bureau of Labor Statistics, CPI Detailed Report (Washington, D.C.: U.S. Government Printing Office) and available at the U.S. Bureau of Labor Statistics website at www.bls.gov/data/home.htm, Series ID: CUUR0000SA0. The rate of inflation for the past 20 years has been 2.16 percent.

17. The loss of wages and employee benefits I have calculated for John Ryan are based on his employment as a Senior Vice President for Trading at Keefe Bruyette & Woods, Inc. The loss of wages and employee benefits is calculated net of personal consumption offset based on a study by Ruble, Patton, and Nelson, "Patton-Nelson Personal Consumption Tables 2011-12," Journal of Legal Economics, Vol. 21, No. 1, 2014, pp. 41-55, based on data from the U.S. Department of Labor, Bureau of Labor Statistic, "Consumer Expenditure Survey, 2011-12," Washington DC, 2012.

18. My methodology for estimating the household services loss is based on standard, accepted peer-reviewed economic methodology. The hourly value of the housekeeping and household management services is based on the mean hourly earnings of carpenters; maintenance and repair workers; painters, construction and maintenance; childcare workers; waiters and waitresses; cooks, private household; laundry and dry-cleaning workers; maids and housekeeping cleaners; landscaping and groundskeeping workers; bookkeeping, accounting and auditing clerks; and taxi drivers and chauffeurs, which is \$16.54 per hour in year 2018 dollars. This wage data is based on information from the U.S. Bureau of Labor Statistics, Occupational Employment Statistics, May 2018 National Occupational Employment and Wage Statistics found at www.bls.gov/oes. This figure is corroborated by the average hourly values published by Expectancy Data, The Dollar Value of A Day: 2017 Dollar Valuation, Shawnee Mission, KS, 2018, which is also based on the BLS Occupational Employment Statistics.

I assess such services at their estimated market value which includes a conservative estimate of 50 percent hourly non-wage component reasonably charged by agencies or free-lance individuals who supply such services on a part-time basis, and who are responsible for advertising, hiring and vetting, training, insuring and bonding the part-time service provider, and who are also responsible for pay-related costs such as social security contributions, etc. If a person were to hire a free-lance employee directly instead of going through an agency, then he or she would have to take on the responsibility for all the non-wage costs that the agency would otherwise

incur and then charge for. The money the person would pay directly in wages would be only a portion of the total costs. The total costs would include those items discussed above that the agency would otherwise incur.

19. I have calculated the loss of enjoyment of life in personal injury cases and wrongful death cases based on peer-reviewed studies in the academic economic literature on Willingness-To-Pay to save statistical lives. These studies are based on what people are willing to pay to reduce the risk of death, and what workers are willing to accept as payment for accepting such risk on the job. This methodology has been widely accepted and published in the peer-reviewed economic literature for several decades in economic journals of the highest quality. My methodology regarding the value of human life is the standard for use by U.S. Government departments and agencies, pursuant to several Presidential Executive Orders in effect since 1972.

20. The analytical methods I used to calculate the damages in my calculations in the above-captioned case are accepted within the economic community. These methods have been tested by various economists, including Ted Miller and Kip Viscusi, and found to be reliable and valid methods of computing the losses. Peer-reviewed journals have published articles detailing these calculation methods in personal injury and wrongful death cases.

A handwritten signature in black ink, appearing to read "Stan V. Smith". The signature is written in a cursive, slightly slanted style.

Stan V. Smith, Ph.D.

Executed this 6th day of February, 2020 in Chicago, IL

Smith Economics Group, Ltd.

A Division of Corporate Financial Group

Economics / Finance / Litigation Support

Stan V. Smith, Ph.D.
President

February 11, 2020

Mr. Dennis G. Pantazis
Wiggins Childs
The Kress Building
301 19th Street North
Birmingham, AL 35203

Re: John Ryan

Dear Mr. Pantazis:

You have asked me to calculate the value of certain losses subsequent to the death of John Ryan. These losses are: (1) the loss of wages and employee benefits; (2) the loss of housekeeping and household management services; and (3) the loss of the value of life ("LVL"), also known as loss of enjoyment of life.

QUALIFICATIONS AND EXPERIENCE

I am President of Smith Economics Group, Ltd., headquartered in Chicago, IL, which provides economic and financial consulting nationwide. I have worked as an economic and financial consultant since 1974, after completing a Research Internship at the Federal Reserve, Board of Governors, in Washington, D.C. My curriculum vitae lists all my publications in the last 10 years and beyond.

I received my Bachelor's Degree from Cornell University. I received a Master's Degree and my Ph.D. in Economics from the University of Chicago; Gary S. Becker, Nobel Laureate 1992, was my Ph.D. thesis advisor. The University of Chicago is one of the world's preeminent institutions for the study of economics, and the home of renowned research in the law and economics movement.

As President of Smith Economics, I have performed economic analyses in a great variety of engagements, including damages analysis in personal injury and wrongful death cases, business valuation, financial analysis, antitrust, contract losses, a wide range of class action matters, employment discrimination, defamation, and intellectual property valuations including evaluations of reasonable royalty.

I have more than 40 years of experience in the field of economics. I am a member of various economic associations and served for three years as Vice President of the National

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Association of Forensic Economics (NAFE) which is the principal association in the field. I was also on the Board of Editors of the peer-reviewed journal, the Journal of Forensic Economics, for over a decade; I have also published scholarly articles in this journal. The JFE is the leading academic journal in the field of Forensic Economics.

I wrote the first textbook on Forensic Economic Damages that has been used in university courses such as the University of Wisconsin, Penn State University, and in various other states. As an adjunct professor, I created and taught the first course in Forensic Economics nationwide, at DePaul University in Chicago.

I am the creator and founder of Ibbotson Associates' Stock, Bonds, Bills, and Inflation (SBBI) Yearbook, Quarterly, Monthly, and SBBI/PC Services. SBBI is generally regarded by academics in the field of finance as the most widely accepted source of statistics on the rates of return on investment securities. SBBI was originally published by Ibbotson Associates, then by Morningstar, Inc., and is now currently published by Duff & Phelps. The original SBBI series generated what became a six-book set universally used for business valuation, and currently available on an online platform. These data series are widely relied upon and regarded as the most accepted and definitive scholarly references by the academic, actuarial and investment community, and in courts of law. All three publishers of the SBBI series acknowledge me as the founder in 1983, for my "invaluable role" as having "originated the idea" of SBBI, which I then implemented while Managing Director at Ibbotson Associates.

I have performed economic analysis in many thousands of cases in almost every state and federal jurisdiction since the early 1980s.

BACKGROUND

John Ryan was a 45.3-year-old, Caucasian, married male, who was born on June 9, 1956, and died on September 11, 2001. Mr. Ryan's remaining life expectancy is estimated at 34.0 years. This data is from the National Center for Health Statistics, United States Life Tables, 2017, Vol. 68, No. 7, National Vital Statistics Reports, 2019. I assume an estimated trial or resolution date of January 1, 2020.

In order to perform this evaluation, I have reviewed the following materials: (1) the September 11th Victim Compensation Fund of 2001 application and supporting documentation for John Ryan, including tax records from 1998 to 2001 and the Summary Report for Mr. Ryan from Keefe, Bruyette, and Woods; (2) additional tax records from 1996 and 1997 for John Ryan; (3)

correspondence from the September 11th Victim Compensation Fund to the family of John Ryan; and (4) the Case Information Form.

My methodology for estimating the losses, which is explained below, is generally based on past wage growth, interest rates, and consumer prices, as well as studies regarding the value of life. The effective net discount rate using statistically average wage growth rates and statistically average discount rates is 0.25 percent.

My estimate of the real wage growth rate is 1.00 percent per year. This growth rate is based on Business Sector, Hourly Compensation growth data from the Major Sector Productivity and Costs Index found at the U.S. Bureau of Labor Statistics website at www.bls.gov/data/home.htm, Series ID: PRS84006103, for the real increase in wages primarily for the last 20 years.

My estimate of the real discount rate is 1.25 percent per year. This discount rate is based on primarily the rate of return on short-term U.S. Treasury investment for the last 20 years. The data is from the statistical series H.15 Selected Interest Rates, published by the Board of Governors of the Federal Reserve System found at www.federalreserve.gov. This data is also published in the Economic Report of the President Table for "Bond yields and interest rates" for the real return on U.S. Treasury investments.

Estimates of real growth and discount rates are net of inflation based on the Consumer Price Index (CPI-U), published in monthly issues of the U.S. Bureau of Labor Statistics, CPI Detailed Report (Washington, D.C.: U.S. Government Printing Office) and available at the U.S. Bureau of Labor Statistics website at www.bls.gov/data/home.htm, Series ID: CUUR0000SA0. The rate of inflation for the past 20 years has been 2.16 percent.

I. LOSS OF WAGES AND EMPLOYEE BENEFITS - Annual Employment

Tables 1 through 9 show the loss of wages and benefits for John Ryan. Mr. Ryan began working at Keefe, Bruyette, and Woods (KBW) in July of 1991. The Summary Report for Mr. Ryan from KBW indicates that by September 2001 he was a Senior Vice President for the firm's Trading department. Mr. Ryan held a MBA degree from Iona University and a Bachelor's degree from Holy Cross University.

Payroll records from KBW indicated that as of 2001 Mr. Ryan's base salary was \$5,769.24 bi-weekly, or \$150,000 annually. In addition to his base salary Mr. Ryan received bonuses in his employment with KBW. The Summary Report from KBW indicates that Mr. Ryan's total income in 1996 was \$444,084, including \$165,519 in salary and \$278,565 in bonuses; his total income in 1997 was \$524,412, including \$135,102 in salary and \$389,310 in bonuses;

his total income in 1998 was \$531,289, including \$156,289 in salary and \$375,000 in bonuses; his total income in 1999 was \$492,916, including \$145,356 in salary and \$347,500 in bonuses; and his total income in 2000 was \$505,215, including \$145,215 in salary and \$360,000 in bonuses.

I illustrate the wage loss for Mr. Ryan at \$526,352 in year 2000 dollars based on his average real salary and bonuses from 1996 to 2000. The wage loss for Mr. Ryan is grown at the national average wage growth rate of 3.84 percent in 2001; 2.05 percent in 2002; 5.27 percent in 2003; 4.41 percent in 2004; 3.04 percent in 2005; 3.89 percent in 2006; 4.08 percent in 2007; 2.94 percent in 2008; 1.05 percent in 2009; 1.23 percent in 2010; 0.52 percent in 2011; 5.87 percent in 2012; zero percent in 2013; 2.57 percent in 2014; 2.46 percent in 2015; 2.14 percent in 2016; 3.01 percent in 2017; 2.92 percent in 2018; and an estimated national average wage growth rate of 3.0 percent in 2019 and 2020. Future wages are grown at a 1.0 percent real rate.

The Summary Report for Mr. Ryan from KBW indicates that his benefits included an insurance plan covering his family, with an employer contribution for insurance of \$10,090 in 2001. This contribution for insurance is estimated to be 1.85 percent of his 2001 annual wages of \$546,576. KBW was an employee-owned firm, and Mr. Ryan had a profit-sharing retirement plan. The 2000 KBW contribution to Mr. Ryan's profit-sharing retirement plan was \$22,363, which is equal to 4.25 percent of the wage loss in year 2000 dollars based on the 1996 to 2000 average real wages. Legally-required employer Social Security contributions of 6.2 percent up to the maximum wage of \$80,400 in 2001, which is \$4,985, and is equal to 0.91 percent of wages for Mr. Ryan. I have assumed that employee benefits grow at the same rate as wages and are discounted to present value at the same discount rate. Since these tables assume annual work, I do not include employee benefits relating to unemployment, injury, illness or disability; benefits are estimated to total 7.01 percent of wages.

Personal consumption is an offset of the income. I use a personal consumption offset based on a study by Ruble, Patton, and Nelson, "Patton-Nelson Personal Consumption Tables 2011-12," Journal of Legal Economics, Vol. 21, No. 1, 2014, pp. 41-55, based on data from the U.S. Department of Labor, Bureau of Labor Statistics, "Consumer Expenditure Survey, 2011-12," Washington DC, 2012, which shows personal consumption in this case for the maximum earnings threshold to be 6.5 percent of wages for a five-person household from 2001 to 2007; 8.8 percent of wages for a four-person household in 2008 and 2009; and 12.6 percent of wages for a two-person household in 2010 and thereafter.

I assume annual employment each year and show the accumulation through life expectancy. While these tables are calculated

through the end of life expectancy, the losses from working through any age can be read off the table.

Based on the above assumptions, my opinion of the wage loss is \$25,949,830 ▶ Table 9; this figure assumes work to age 79.3, but the ability to work through any assumed age may be read from Table 9; for example, the loss to age 67 is \$16,159,990.

II. LOSS OF HOUSEHOLD/FAMILY HOUSEKEEPING AND HOUSEHOLD MANAGEMENT SERVICES

Tables 10 through 12 show the pecuniary loss of tangible housekeeping chores and household management services. The number of hours of housekeeping and household management services for married, working males is 13.01 hours per week from 2001 through 2009 when Mr. Ryan's youngest children are assumed to be in the household, and 13.85 hours per week from 2010 through 2023 when no children are assumed to be in the household. The number of hours of housekeeping and household management services for married, retired males is 20.54 hours per week from 2024 and thereafter. This data is based on the American Time Use Survey published by the Bureau of Labor Statistics, www.bls.gov/tus, usefully summarized in a publication by Expectancy Data, The Dollar Value of A Day: 2017 Dollar Valuation, Shawnee Mission, KS, 2018.

The hourly value of the housekeeping and household management services is based on the mean hourly earnings of carpenters; maintenance and repair workers; painters, construction and maintenance; childcare workers; waiters and waitresses; cooks, private household; laundry and dry-cleaning workers; maids and housekeeping cleaners; landscaping and groundskeeping workers; bookkeeping, accounting and auditing clerks; and taxi drivers and chauffeurs, which is \$16.54 per hour in year 2018 dollars. This wage data is based on information from the U.S. Bureau of Labor Statistics, Occupational Employment Statistics, May 2018 National Occupational Employment and Wage Statistics found at www.bls.gov/oes. This figure is corroborated by the average hourly values published by Expectancy Data, The Dollar Value of A Day: 2018 Dollar Valuation, Shawnee Mission, KS, 2019, which is also based on the BLS Occupational Employment Statistics.

I assess such services at their estimated market value which includes a conservative estimate of 50 percent hourly non-wage component reasonably charged by agencies or free-lance individuals who supply such services on a part-time basis, and who are responsible for advertising, hiring and vetting, training, insuring and bonding the part-time service provider, and who are also responsible for pay-related costs such as social security contributions, etc. If a person were to hire a free-lance employee directly instead of going through an agency, then

he or she would have to take on the responsibility for all the non-wage costs that the agency would otherwise incur and then charge for. The money the person would pay directly in wages would be only a portion of the total costs. The total costs would include those items discussed above that the agency would otherwise incur.

Adding the non-wage component to the hourly wage is consistent with labor market theory and competitive market behavior. Peer-reviewed economic research supports this theory and shows that the non-wage costs can average up to 300 percent for the wage. See, for example, Cushing, Matthew J. and David I. Rosenbaum, "Valuing Household Services: A New Look at the Replacement Cost Approach," Journal of Legal Economics, Vol 19, No. 1, 2012, pp. 37-60, wherein the authors found that non-wage costs exceed wage costs by 167 percent. This is more than triple the 50 percent non-wage costs amount I use, discussed above. Also see Smith, David A., Stan V. Smith, and Stephanie R. Uhl, "Estimating the Value of Family Household Management Services: Approaches and Markups," Forensic Rehabilitation & Economics, Vol 3, No. 2, 2010, pp. 85-94. According to this research, the statistical probability is 99 percent that the non-wage costs exceed 250 percent of the wage cost. The use of only a 50 percent non-wage cost makes my estimate very conservative, and it far more than compensates for two possible variations: variations in the national wage depending on locality, and variations in different types of services actually performed in the household. Thus even if one or more of the different types of services are not performed, and even if the services are provided in low wage areas, my use of the low, 50 percent non-wage costs more than compensates for these factors.

According to Merry Maids, a national home cleaning service agency, the charges for their services within the largest 100 Metropolitan Statistical Areas with populations of 500,000 and up range from \$40 to \$65 per hour, averaging \$49 per hour, in 2012. This hourly rate reflects non-wage costs of 250 percent of wages, and after adjusting for market factors, is four times the non-wage costs figure that I use, resulting in an hourly rate of more than double the rate that I use. Thus my use of only a 50 percent addition for non-wage costs is, in fact, very conservative. The hourly value of these services grows at the same rate as the wage growth rate discussed above.

Based on these assumptions, and John Ryan's life expectancy of 79.3 years, my opinion of the loss of the value of housekeeping and household management services is \$659,398 ► Table 12.

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III. LOSS OF VALUE OF LIFE

Tables 13 through 15 show the loss of the value of life. Economists have long agreed that life is valued at more than the lost earnings capacity. My estimate of the value of life is based on many economic studies on what we, as a contemporary society, actually pay to preserve the ability to lead a normal life. The studies examine incremental pay for risky occupations as well as a multitude of data regarding expenditure for life savings by individuals, industry, and state and federal agencies. Based on the average value of a statistical life and life expectancy of 79.3 years, my opinion of the loss of the value of life for John Ryan is \$4,307,325 ▶ Table 15.

My estimate of the value of life is consistent with estimates published in other studies that examine and review the broad spectrum of economic literature on the value of life. Among these is "The Plausible Range for the Value of Life," Journal of Forensic Economics, Vol. 3, No. 3, Fall 1990, pp. 17-39, by T. R. Miller. This study reviews 67 different estimates of the value of life published by economists in peer-reviewed academic journals. The Miller results, in most instances, show the value of life to range from approximately \$1.6 million to \$2.9 million dollars in year 1988 after-tax dollars, with a mean of approximately \$2.2 million dollars. In "The Value of Life: Estimates with Risks by Occupation and Industry," Economic Inquiry, Vol. 42, No. 1, May 2003, pp. 29-48, Professor W. K. Viscusi estimates the value of life to be approximately \$4.7 million dollars in year 2000 dollars. An early seminal paper on the value of life was written by Richard Thaler and Sherwin Rosen, "The Value of Saving a Life: Evidence from the Labor Market." in N.E. Terlickyj (ed.), Household Production and Consumption. New York: Columbia University Press, 1975, pp. 265-300. The Meta-Analyses Appendix to this report reviews additional literature suggesting a value of life of approximately \$5.4 million in year 2008 dollars.

Because it is generally accepted by economists, the economic methodology for the valuation of life has been found to meet the Daubert and Frye standards by many courts, along with the Rules of Evidence in many states nationwide. My testimony on the value of life has been accepted in approximately 225 state and federal cases nationwide in approximately two-thirds of the states and two-thirds of the federal jurisdictions. Testimony has been accepted by U.S. district and appellate courts as well as in state circuit, appellate, and supreme courts. Proof of general acceptance and other standards is found in a discussion of the extensive references to the scientific economic peer-reviewed literature on the value of life listed in the **Value of Life Appendix** to this report.

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The underlying, academic, peer-reviewed studies fall into two general groups: (1) consumer behavior and purchases of safety devices; (2) wage risk premiums to workers; in addition, there is a third group of studies consisting of cost-benefit analyses of regulations. For example, one consumer safety study analyzes the costs of smoke detectors and the lifesaving reduction associated with them. One wage premium study examines the differential rates of pay for dangerous occupations with a risk of death on the job. Just as workers receive shift premiums for undesirable work hours, workers also receive a higher rate of pay to accept a increased risk of death on the job. A study of government regulation examines the lifesaving resulting from the installation of smoke stack scrubbers at high-sulphur, coal-burning power plants. As a hypothetical example of the methodology, assume that a safety device such as a carbon monoxide detector costs \$46 and results in lowering a person's risk of premature death by one chance in 100,000. The cost per life saved is obtained by dividing \$46 by the one in 100,000 probability, yielding \$4,600,000. Overall, based on the peer-reviewed economic literature, I estimate the central tendency of the range of the economic studies to be approximately \$4.9 million in year 2019 dollars.

Other factors may be weighed to determine if these estimated losses for John Ryan should be adjusted because of special qualities or circumstances that economists do not as yet have a methodology for analysis.

In each set of tables, the estimated losses are calculated from September 11, 2001 through an assumed trial or resolution date of January 1, 2020, and from that date thereafter. The last table in each set accumulates the past and future estimated losses. These estimates are provided as a tool, an aid, and a guide to assist the evaluation by others.

All opinions expressed in this report are clearly labeled as such. They are rendered in accordance with generally accepted standards within the field of economics and are expressed to a reasonable degree of economic certainty. Estimates, assumptions, illustrations and the use of benchmarks, which are not opinions, but which can be viewed as hypothetical in nature, are also clearly disclosed and identified herein.

In my opinion, it is reasonable for experts in the field of economics and finance to rely on the materials and information I reviewed in this case for the formulation of my substantive opinions herein.

If additional information is provided to me, which could alter my opinions, I may incorporate any such information into an update, revision, addendum, or supplement of the opinions expressed in this report.

If you have any questions, please do not hesitate to call me.

Sincerely,



Stan V. Smith, Ph.D.
President

APPENDIX: HOUSEHOLD SERVICES VALUATION

Courts have long recognized claims for the value of tangible household family services as an element of damages in personal injury and wrongful death cases, as an aspect of the pecuniary loss in such cases. These services are those that are provided by the injured family member to himself or herself and to other family members, without charge or cost. Other family members who may receive such services can include spouses, children, parents or siblings; such family members do not necessarily have to reside in the same household to receive such services.

Economists and courts have also long recognized that an appropriate method in valuing such tangible services is to value their estimated market-based costs by examining costs paid in labor markets that provide generally comparable services for. Thus, economists can value the service by looking at market equivalents from which a pecuniary standard can be established. This approach is set forth in the 1913 U.S. Supreme Court Decision, Michigan Central Railroad Company v. Vreeland, 227 U.S. 59 (1913). So this method is a century old.

The Supreme Court's suggesting in valuing compensable services in the Vreeland decision is a standard that is not rigid, but actually rather general: "[The] pecuniary loss or damage must be one which can be measured by some standard.... Compensation for such loss manifestly does not include damages by way of recompense for grief or wounded feelings." Michigan Central v. Vreeland.

Examples of lost household services that used to be performed by persons (whether fatally or non-fatally injured) can include physical chores such as mowing the lawn, painting the house, cleaning the windows, doing the laundry, washing and repairing the car, preparing the meals and doing the dishes, among others. For many decades economists have met the Supreme Court's general standard by using labor market equivalents for cooks, laundry workers, gardeners, maids, etc. in valuing the physical chores regarding housekeeping services.

Additionally, economists have recognized that tangible services to family members include services well beyond the physical housekeeping chores. For example, William G. Jungbauer and Mark J. Odegard, in Maximizing Recovery in FELA Wrongful Death Actions, in Assessing Family Loss in Wrongful Death Litigation: The Special Roles of Lost Services and Personal Consumption, Lawyers & Judges Publishing Co., 1999, pp. 284, indicate that a complete analysis of all services performed by family members includes much, much more than the physical housekeeping chores. Frank D. Tinari, in a peer-reviewed, scientific, economic journal article "Household Services: Toward a More Comprehensive Measure," Journal of Forensic Economics, Vol. 11, No. 3, Fall

1998, pp. 253-265, expresses the same view. Dr. Tinari has been a tenured Professor at Seton Hall University, and is a former president of the National Association of Forensic Economics. There has been no peer-reviewed critique of this article since it appeared.

Jungbauer and Odegard indicate that a person may have provided services of many other professions such as that of a chauffeur, driving other family members to appointments, or that of a security guard, especially regarding the injury to a male spouse, etc. Every family member acts as a companion to other family members. And it is common for family members to act as counselors for one another, typically providing advice and counsel on important personal, family, medical, financial, career or other issues. The marketplace can and does value such items of loss. If the person cannot provide these services, or does so at a reduced capacity or rate, there is a distinct and definite loss to the other family members. These losses have a definite and easily measurable pecuniary value. Vreeland requires only that a "reasonable expectation" of loss of services be proven and that such loss be valued by some standard, presumably a reasonably-based economic standard, to allow recovery.

The economic literature on recovery of loss of services discusses an estimated market-oriented valuation cost method to assess the pecuniary value of the loss of accompaniment services, as well as the value of advice, guidance and counsel services that family members provide to one another, within a broadly defined scope of family services. See, for example, Frank D. Tinari, "Household Services: Toward a More Comprehensive Measure, " Journal of Forensic Economics, Vol. 11, No. 3, Fall 1998, pp. 253-265.

Finally, according to Chief Justice Robert Wilentz of the Supreme Court of New Jersey, in Green v. Bittner, 85 NJ 1, 1980, pp. 12, accompaniment services, to be compensable, must be that which would have provided services substantially equivalent to those provided by the companions often hired today by the aged or infirm, or substantially equivalent to services provided by nurses or practical nurses; and its value must be confined to what the marketplace would pay a stranger with similar qualifications for performing such services.

In valuing the household services that are provided by family members to one another, beyond the physical housekeeping chores, both the U.S Supreme Court and the New Jersey Supreme Court discuss looking at labor markets for the equivalent value of such services. This methodology is identical to the traditional approach that economists have been using for over four decades in valuing the physical chores involved in housekeeping services.

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APPENDIX: VALUE OF LIFE

The economic methodology for the valuation of life has been found to meet the Daubert and Frye standards by many courts, along with the Rules of Evidence in many states nationwide. My testimony on the value of life has been accepted in approximately 225 state and federal cases nationwide in approximately two-thirds of the states and two-thirds of the federal jurisdictions. Testimony has been accepted by U.S. district and appellate courts as well as in state circuit, appellate, and supreme courts. The Daubert standard sets forth four criteria:

1. Testing of the theory and science
2. Peer Review
3. Known or potential rate of error
4. Generally accepted.

Testing of the theory and science has been accomplished over the past four decades, since the 1960s. Dozens of economists of high renown have published over a hundred articles in high quality, peer-reviewed economic journals measuring the value of life. The value of life theories are perhaps among the most well-tested in the field of economics, as evidenced by the enormous body of economic scientific literature that has been published in the field and is discussed below.

Peer Review of the concepts and methodology have been extraordinarily extensive. One excellent review of this extensive, peer-reviewed literature can be found in "The Value of Risks to Life and Health," W. K. Viscusi, Journal of Economic Literature, Vol. 31, December 1993, pp. 1912-1946. A second is "The Value of a Statistical Life: A Critical Review of Market Estimates throughout the World." W. K. Viscusi and J. E. Aldy, Journal of Risk and Uncertainty, Vol. 27, No. 1, November 2002, pp. 5-76. Additional theoretical and empirical work by Viscusi, a leading researcher in the field, can be found in: "The Value of Life", W. K. Viscusi, John M. Olin Center for Law, Economics, and Business, Harvard Law School, Discussion Paper No. 517, June 2005. An additional peer-reviewed article discusses the application to forensic economics: "The Plausible Range for the Value of Life," T. R. Miller, Journal of Forensic Economics, Vol. 3, No. 3, Fall 1990, pp. 17-39, which discusses the many dozens of articles published in other peer-reviewed economic journals on this topic. This concept is discussed in detail in "Willingness to Pay Comes of Age: Will the System Survive?" T. R. Miller, Northwestern University Law Review, Summer 1989, pp. 876-907, and "Hedonic Damages in Personal Injury and Wrongful Death

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Litigation," by Stan V. Smith in Gaughan and Thornton, eds., Litigation Economics, Contemporary Studies in Economic and Financial Analysis, Vol. 74, pp. 39-59, JAI Press, Greenwich, CT, 1993. Kenneth Arrow, a Nobel Laureate in economics, discusses this method for valuing life in "Invaluable Goods," Journal of Economic Literature, Vol. 35, No. 2, 1997, pp. 759. See the Meta-Analyses Appendix for an additional review of the literature.

The known or potential rate of error is well researched. All of these articles discuss the known or potential rate of error, well within the acceptable standard in the field of economics, generally using a 95% confidence rate for the statistical testing and acceptance of results. There are few areas in the field of economics where the known or potential rate of error has been as well-accepted and subject to more extensive investigation.

General Acceptance of the concepts and methodology on the value of life in the field of economics is extensive. This methodology is and has been generally accepted in the field of economics for many years. Indeed, according to the prestigious and highly-regarded research institute, The Rand Corporation, by 1988, the peer-reviewed scientific methods for estimating the value of life were well-accepted: "Most economists would agree that the willingness-to-pay methodology is the most conceptually appropriate criterion for establishing the value of life," Computing Economic loss in Cases of Wrongful Death, King and Smith, Rand Institute for Civil Justice, R-3549-ICJ, 1988.

While first discussed in cutting edge, peer-reviewed economic journals, additional proof of general acceptance is now indicated by the fact that this methodology is now taught in standard economics courses at the undergraduate and graduate level throughout hundreds of colleges and universities nationwide as well as the fact that it is taught and discussed in widely-accepted textbooks in the field of law and economics: Economics, Sixth Edition, David C. Colander, McGraw-Hill Irwin, Boston, 2006, pp. 463-465; this introductory economics textbook is the third most widely used textbook in college courses nationwide. Hamermesh and Rees's The Economics of Work and Pay, Harper-Collins, 1993, Chapter 13, a standard advanced textbook in labor economics, also discusses the methodology for valuing life. Other textbooks discuss this topic as well. Richard Posner, a Judge and former Chief Judge of the U.S. Court of Appeals for the highly regarded 7th Circuit and Senior Lecturer at the University of Chicago Law School, one of most prolific legal writers in America, details the Value of Life approach in his widely used textbooks: Economic Analysis of Law, 1986, Little Brown & Co., pp. 182-185 and Tort Law, 1982, Little Brown & Co., pp. 120-126.

As further evidence of general acceptance in the field, some surveys (albeit non-scientific) published in the field of



forensic economics show that hundreds of economists nationwide are now familiar with this methodology and are available to prepare (and critique) forensic economic value of life estimates. Indeed, some economists who indicate they will prepare such analysis for plaintiffs also are willing to critique such analysis for defendants, as I have done. That an economist is willing to critique a report does not indicate that he or she is opposed to the concept or the methodology, but merely available to assure that the plaintiff economist has employed proper techniques. The fact that there are economists who indicate they do not prepare estimates of value of life is again no indication that they oppose the methodology: many claim they are not familiar with the literature and untrained in this area. While some CPAs and others without a degree in economics have opposed these methods, such professionals do not have the requisite academic training and are unqualified to make such judgements. However, as in any field of economics, this area is not without any dissent. General acceptance does not mean universal acceptance.

Additional evidence of general acceptance in the field is found in the teaching of the concepts regarding the value of life. Forensic Economics is now taught as a special field in a number of institutions nationwide. I taught what is believed to be the first course ever presented in the field of Forensic Economics at DePaul University in Spring, 1990. My own book, Economic/Hedonic Damages, Anderson, 1990, and supplemental updates thereto, co-authored with Dr. Michael Brookshire, a Professor of Economics in West Virginia, has been used as a textbook in at least 5 colleges and universities nationwide in such courses in economics, and has a thorough discussion of the methodology. Toppino et. al., in "Forensic Economics in the Classroom," published in The Earnings Analyst, Journal of the American Rehabilitation Economics Association, Vol. 4, 2001, pp. 53-86, indicate that hedonic damages is one of 15 major topic areas taught in such courses.

Lastly, general acceptance is found by examining publications in the primary journal in the field of Forensic Economics, which is the peer-reviewed Journal of Forensic Economics, where there have been published many articles on the value of life. Some are cited above. Others include: "The Econometric Basis for Estimates of the Value of Life," W. K. Viscusi, Vol 3, No. 3, Fall 1990, pp. 61-70; "Hedonic Damages in the Courtroom Setting." Stan V. Smith, Vol. 3, No. 3, Fall 1990, pp. 41-49; "Issues Affecting the Calculated Value of Life," E. P. Berla, M. L. Brookshire and Stan V. Smith, Vol 3, No. 1, 1990, pp. 1-8; "Hedonic Damages and Personal Injury: A Conceptual Approach." G. R. Albrecht, Vol. 5., No. 2, Spring/Summer 1992, pp. 97-104; "The Application of the Hedonic Damages Concept to Wrongful and Personal Injury Litigation." G. R. Albrecht, Vol. 7, No. 2, Spring/Summer 1994, pp. 143-150; and also "A Review of the Monte Carlo Evidence Concerning Hedonic Value of Life Estimates," R. F.

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Gilbert, Vol. 8, No. 2, Spring/Summer 1995, pp. 125-130. Professor Ike Mathur, while Chairman of the Department of Finance at Southern Illinois University wrote an article on how the value of life studies can be used to provide a basis for estimating the value of life per year in application to litigation. This article corroborates my approach: "Estimating Value of Life per Life Year." I. Mathur, Journal of Forensic Economics, Vol. 3, No. 3, 1990, pp. 95-96. As do many of the authors of applications of the value of life literature to litigation economics, Professor Mathur has frequently testified in court, and courts have admitted his testimony.

It is important to note that this methodology is endorsed and employed by the U. S. Government as the standard and recommended approach for use by all U. S. Agencies in valuing life for policy purposes, as mandated in current and past Presidential Executive Orders in effect since 1972, and as discussed in "Report to Congress on the Costs and Benefits of Federal Regulations," Office of Management and Budget, 1998, and "Economic Analysis of Federal Regulations Under Executive Order 12866," Executive Office of the President, Office of Management and Budget, pp. 1-37, and "Report to the President on Executive Order No. 12866," Regulatory Planning and Review, May 1, 1994, Office of Information and Regulatory Affairs, Office of Management and Budget. Prior presidents signed similar orders as discussed in "Federal Agency Valuations of Human life," Administrative Conference of the United States, Report for Recommendation 88-7, December 1988, pp. 368-408. 926

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APPENDIX: META-ANALYSES AND VALUE OF LIFE RESULTS SINCE 2000

Below I list the principal systematic reviews (meta-analyses), since the year 2000, of the value of life literature, and the values of a statistical life that they recommend. In statistics, a meta-analysis combines the results of several studies that address a set of related research hypotheses. Meta-analysis increase the statistical power of studies by analyzing a group of studies and provide a more powerful and accurate data analysis than would result from analyzing each study alone. Based on those reviews, the Summary Table suggests a best estimate. The following table summarizes the studies and their findings.

These statistically based studies place the value between \$4.4 and \$7.5 million, with \$5.9 million in year 2005 dollars representing a conservative yet credible estimate of the average (and range midpoint) of the values of a statistical life published in the studies in year 2005 dollars. Net of human capital, a credible net value of life based on all these literature reviews to be \$4.8 million in year 2005 dollars, or \$5.4 million in year 2008 dollars.

The actual value that I use, \$4.1 million in year 2008 dollars (\$4.9 million in year 2019 dollars) is approximately 24 percent lower than a conservative average estimate based on the credible meta-analyses. This value was originally based on a review conducted in the late 1980s, averaging the results published by that time. I have increased that late 1980s value only by inflation over time, despite the fact a review of literature over the years since that time has put obvious upward pressure on the figure that I use.

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VALUE OF STATISTICAL LIFE SUMMARY TABLE

Mean and range of value of statistical life estimates (in 2005 dollars) from the best meta-analyses and systematic reviews since 2000 and characteristics of those reviews.

Study	Formal Meta-Analysis?	Number of Values	Best Estimate (2005 Dollars)	Range	Context
Miller 2000	Yes	68 estimates	\$5.1M	\$4.5-\$6.2M	US estimate from all
Mrozek & Taylor 2002	Yes	203 estimates	\$4.4M	+ or - 35%	Labor market
Viscusi & Aldy 2003	Yes	49 estimates	\$6.5M	\$5.1-\$9.6M	Labor market, US estimate from all
Kochi et al. 2006	Yes	234 estimates	\$6.0M	+ or - 44%	Labor market survey
Bellavance 2006 (published in 2009)	Yes	37 estimates	\$7.5M	+ or - 19%	Labor market

Adapted from Ted R. Miller's paper "Hedonic Damages," Journal of Forensic Economics, Vol. 20, No. 2 (October 2008), pp. 137-153.

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Miller (2000) started from the Miller 1989 JFE estimates and used statistical methods to adjust for differences between studies. It also added newer studies, primarily ones outside the United States. The authors specified the most appropriate study approach a priori, which allowed calculation of a best estimate from the statistical regression. Miller, Ted R, "Variations between Countries in Values of Statistical Life", Journal of Transport Economics and Policy, Vol. 34, No. 2 (May 2000), pp. 169-188.

Mrozek and Taylor (2002) searched intensively for studies of the value of life implied by wages paid for risky jobs. They coded all values from each study rather than a most appropriate estimate. A statistical analysis identified what factors accounted for the differences in values between studies. The authors specified the most appropriate study approach a priori, which allowed calculation of a best estimate from the statistical regression. Mrozek, Janusz R. and Laura O. Taylor, "What Determines the Value of Life? A Meta-Analysis", Journal of Policy Analysis and Management, Vol. 21, No. 2 (2002), pp. 253-270.

Viscusi and Aldy (2003) focused on values from labor market studies that they considered of high quality and that provided data on risk levels and other important explanatory variables. They used statistical methods to account for variations between studies and derive a best estimate. W.K. Viscusi and J.E. Aldy, "The Value of a Statistical Life: A Critical Review of Market Estimates Throughout the World", Journal of Risk and Uncertainty, Vol. 27, No. 1 (2003), pp. 5-76.

Kochi et al. (2006) searched intensively for studies of the value of life implied by wages and coded all values from each study rather than a most appropriate estimate. They did not filter study quality carefully. The best estimate was derived by statistical methods based on the distribution of the values within and across studies. Kochi, Ikuho, Bryan Hubbell, and Randall Kramer, "An Empirical Bayes Approach to Combining and Comparing Estimates of the Value of a Statistical Life for Environmental Policy Analysis", Environmental and Resource Economics, Vol. 34 (2006), pp. 385-406.

Bellavance et al. (2009) focused on values from labor market studies that they considered of high quality and that provided data on risk levels and other important explanatory variables. They used statistical methods to account for variations between studies and derive a best estimate. Bellavance, Francois, Georges Dionne, and Martin Lebeau, "The Value of a Statistical Life: A Meta-Analysis with a Mixed Effects Regression Model," Journal of Health Economics, Vol. 28, Issue 2, (2009), pp. 444-464. 3A22



SUMMARY OF LOSSES FOR JOHN RYAN

TABLE *****	DESCRIPTION *****	ESTIMATE *****
	<u>EARNINGS</u>	
	LOSS OF WAGES & BENEFITS, NET OF PERSONAL CONSUMPTION	
9	Annual Employment to age 67	\$16,159,990

	<u>HOUSEHOLD/FAMILY SERVICES</u>	
	LOSS OF HOUSEHOLD/FAMILY HOUSEKEEPING AND HOME MANAGEMENT SERVICES	
12		\$ 659,398

	<u>LOSS OF ENJOYMENT OF LIFE</u>	
15	LOSS OF VALUE OF LIFE	\$ 4,307,325

The information on this Summary of Losses is intended to summarize losses under certain given assumptions. Please refer to the report and the tables for all the opinions.

Table 1

LOSS OF PAST WAGES

2001 - 2019

YEAR	AGE	WAGES	CUMULATE
****	***	*****	*****
2001	45	\$166,219	\$166,219
2002	46	557,778	723,997
2003	47	587,159	1,311,156
2004	48	613,059	1,924,215
2005	49	631,696	2,555,911
2006	50	656,278	3,212,189
2007	51	683,069	3,895,258
2008	52	703,165	4,598,423
2009	53	710,556	5,308,979
2010	54	719,271	6,028,250
2011	55	722,978	6,751,228
2012	56	765,403	7,516,631
2013	57	765,403	8,282,034
2014	58	785,050	9,067,084
2015	59	804,391	9,871,475
2016	60	821,568	10,693,043
2017	61	846,322	11,539,365
2018	62	871,069	12,410,434
2019	63	897,201	\$13,307,635
JOHN RYAN		\$13,307,635	

Table 2

LOSS OF PAST EMPLOYEE BENEFITS
2001 - 2019

YEAR	AGE	EMPLOYEE BENEFITS	CUMULATE
****	***	*****	*****
2001	45	\$11,652	\$11,652
2002	46	39,100	50,752
2003	47	41,160	91,912
2004	48	42,975	134,887
2005	49	44,282	179,169
2006	50	46,005	225,174
2007	51	47,883	273,057
2008	52	49,292	322,349
2009	53	49,810	372,159
2010	54	50,421	422,580
2011	55	50,681	473,261
2012	56	53,655	526,916
2013	57	53,655	580,571
2014	58	55,032	635,603
2015	59	56,388	691,991
2016	60	57,592	749,583
2017	61	59,327	808,910
2018	62	61,062	869,972
2019	63	62,894	\$932,866
JOHN RYAN		\$932,866	

Table 3

LOSS OF PAST PERSONAL CONSUMPTION
2001 - 2019

YEAR	AGE	PERSONAL CONSUMPTION	CUMULATE
****	***	*****	*****
2001	45	-\$11,569	-\$11,569
2002	46	-38,821	-50,390
2003	47	-40,866	-91,256
2004	48	-42,669	-133,925
2005	49	-43,966	-177,891
2006	50	-45,677	-223,568
2007	51	-47,542	-271,110
2008	52	-66,238	-337,348
2009	53	-66,934	-404,282
2010	54	-96,958	-501,240
2011	55	-97,457	-598,697
2012	56	-103,176	-701,873
2013	57	-103,176	-805,049
2014	58	-105,825	-910,874
2015	59	-108,432	-1,019,306
2016	60	-110,747	-1,130,053
2017	61	-114,084	-1,244,137
2018	62	-117,420	-1,361,557
2019	63	-120,943	-\$1,482,500
JOHN RYAN		-\$1,482,500	

Table 4

ECONOMIC LOSS TO DATE

2001 - 2019

YEAR	AGE	WAGES	EMPLOYEE BENEFITS	PERSONAL CONSUMPTION	TOTAL	CUMULATE
****	***	*****	*****	*****	*****	*****
2001	45	\$166,219	\$11,652	-\$11,569	\$166,302	\$166,302
2002	46	557,778	39,100	-38,821	558,057	724,359
2003	47	587,159	41,160	-40,866	587,453	1,311,812
2004	48	613,059	42,975	-42,669	613,365	1,925,177
2005	49	631,696	44,282	-43,966	632,012	2,557,189
2006	50	656,278	46,005	-45,677	656,606	3,213,795
2007	51	683,069	47,883	-47,542	683,410	3,897,205
2008	52	703,165	49,292	-66,238	686,219	4,583,424
2009	53	710,556	49,810	-66,934	693,432	5,276,856
2010	54	719,271	50,421	-96,958	672,734	5,949,590
2011	55	722,978	50,681	-97,457	676,202	6,625,792
2012	56	765,403	53,655	-103,176	715,882	7,341,674
2013	57	765,403	53,655	-103,176	715,882	8,057,556
2014	58	785,050	55,032	-105,825	734,257	8,791,813
2015	59	804,391	56,388	-108,432	752,347	9,544,160
2016	60	821,568	57,592	-110,747	768,413	10,312,573
2017	61	846,322	59,327	-114,084	791,565	11,104,138
2018	62	871,069	61,062	-117,420	814,711	11,918,849
2019	63	897,201	62,894	-120,943	839,152	\$12,758,001
JOHN RYAN		\$13,307,635	\$932,866	-\$1,482,500	\$12,758,001	

Table 5

PRESENT VALUE OF FUTURE WAGES

2020 - 2035

YEAR	AGE	WAGES	DISCOUNT FACTOR	PRESENT VALUE	CUMULATE
****	***	*****	*****	*****	*****
2020	64	\$924,117	0.98765	\$912,704	\$912,704
2021	65	933,358	0.97546	910,453	1,823,157
2022	66	942,692	0.96342	908,208	2,731,365
2023	67	952,119	0.95152	905,960	3,637,325
2024	68	961,640	0.93978	903,730	4,541,055
2025	69	971,256	0.92817	901,491	5,442,546
2026	70	980,969	0.91672	899,274	6,341,820
2027	71	990,779	0.90540	897,051	7,238,871
2028	72	1,000,687	0.89422	894,834	8,133,705
2029	73	1,010,694	0.88318	892,625	9,026,330
2030	74	1,020,801	0.87228	890,424	9,916,754
2031	75	1,031,009	0.86151	888,225	10,804,979
2032	76	1,041,319	0.85087	886,027	11,691,006
2033	77	1,051,732	0.84037	883,844	12,574,850
2034	78	1,062,249	0.82999	881,656	13,456,506
2035	79	787,752	0.82244	647,879	\$14,104,385
JOHN RYAN				\$14,104,385	

Table 6

PRESENT VALUE OF FUTURE EMPLOYEE BENEFITS
2020 - 2035

YEAR	AGE	EMPLOYEE BENEFITS	DISCOUNT FACTOR	PRESENT VALUE	CUMULATE
****	***	*****	*****	*****	*****
2020	64	\$64,781	0.98765	\$63,981	\$63,981
2021	65	65,428	0.97546	63,822	127,803
2022	66	66,083	0.96342	63,666	191,469
2023	67	66,744	0.95152	63,508	254,977
2024	68	67,411	0.93978	63,352	318,329
2025	69	68,085	0.92817	63,194	381,523
2026	70	68,766	0.91672	63,039	444,562
2027	71	69,454	0.90540	62,884	507,446
2028	72	70,148	0.89422	62,728	570,174
2029	73	70,850	0.88318	62,573	632,747
2030	74	71,558	0.87228	62,419	695,166
2031	75	72,274	0.86151	62,265	757,431
2032	76	72,996	0.85087	62,110	819,541
2033	77	73,726	0.84037	61,957	881,498
2034	78	74,464	0.82999	61,804	943,302
2035	79	55,221	0.82244	45,416	\$988,718
JOHN RYAN				\$988,718	

Table 7

PRESENT VALUE OF FUTURE PERSONAL CONSUMPTION
2020 - 2035

YEAR	AGE	PERSONAL CONSUMPTION	DISCOUNT FACTOR	PRESENT VALUE	CUMULATE
****	***	*****	*****	*****	*****
2020	64	-\$124,571	0.98765	-\$123,033	-\$123,033
2021	65	-125,817	0.97546	-122,729	-245,762
2022	66	-127,075	0.96342	-122,427	-368,189
2023	67	-128,346	0.95152	-122,124	-490,313
2024	68	-129,629	0.93978	-121,823	-612,136
2025	69	-130,925	0.92817	-121,521	-733,657
2026	70	-132,235	0.91672	-121,222	-854,879
2027	71	-133,557	0.90540	-120,923	-975,802
2028	72	-134,893	0.89422	-120,624	-1,096,426
2029	73	-136,242	0.88318	-120,326	-1,216,752
2030	74	-137,604	0.87228	-120,029	-1,336,781
2031	75	-138,980	0.86151	-119,733	-1,456,514
2032	76	-140,370	0.85087	-119,437	-1,575,951
2033	77	-141,773	0.84037	-119,142	-1,695,093
2034	78	-143,191	0.82999	-118,847	-1,813,940
2035	79	-106,189	0.82244	-87,334	-\$1,901,274
JOHN RYAN				-\$1,901,274	

Table 8

PRESENT VALUE OF FUTURE WAGE AND BENEFIT LOSS
2020 - 2035

YEAR	AGE	WAGES	EMPLOYEE BENEFITS	PERSONAL CONSUMPTION	TOTAL	CUMULATE
****	***	*****	*****	*****	*****	*****
2020	64	\$912,704	\$63,981	-\$123,033	\$853,652	\$853,652
2021	65	910,453	63,822	-122,729	851,546	1,705,198
2022	66	908,208	63,666	-122,427	849,447	2,554,645
2023	67	905,960	63,508	-122,124	847,344	3,401,989
2024	68	903,730	63,352	-121,823	845,259	4,247,248
2025	69	901,491	63,194	-121,521	843,164	5,090,412
2026	70	899,274	63,039	-121,222	841,091	5,931,503
2027	71	897,051	62,884	-120,923	839,012	6,770,515
2028	72	894,834	62,728	-120,624	836,938	7,607,453
2029	73	892,625	62,573	-120,326	834,872	8,442,325
2030	74	890,424	62,419	-120,029	832,814	9,275,139
2031	75	888,225	62,265	-119,733	830,757	10,105,896
2032	76	886,027	62,110	-119,437	828,700	10,934,596
2033	77	883,844	61,957	-119,142	826,659	11,761,255
2034	78	881,656	61,804	-118,847	824,613	12,585,868
2035	79	647,879	45,416	-87,334	605,961	\$13,191,829
JOHN RYAN		\$14,104,385	\$988,718	-\$1,901,274	\$13,191,829	

Table 9

PRESENT VALUE OF NET WAGE AND BENEFIT LOSS
2001 - 2035

YEAR	AGE	WAGES	EMPLOYEE BENEFITS	PERSONAL CONSUMPTION	TOTAL	CUMULATE
****	***	*****	*****	*****	*****	*****
2001	45	\$166,219	\$11,652	-\$11,569	\$166,302	\$166,302
2002	46	557,778	39,100	-38,821	558,057	724,359
2003	47	587,159	41,160	-40,866	587,453	1,311,812
2004	48	613,059	42,975	-42,669	613,365	1,925,177
2005	49	631,696	44,282	-43,966	632,012	2,557,189
2006	50	656,278	46,005	-45,677	656,606	3,213,795
2007	51	683,069	47,883	-47,542	683,410	3,897,205
2008	52	703,165	49,292	-66,238	686,219	4,583,424
2009	53	710,556	49,810	-66,934	693,432	5,276,856
2010	54	719,271	50,421	-96,958	672,734	5,949,590
2011	55	722,978	50,681	-97,457	676,202	6,625,792
2012	56	765,403	53,655	-103,176	715,882	7,341,674
2013	57	765,403	53,655	-103,176	715,882	8,057,556
2014	58	785,050	55,032	-105,825	734,257	8,791,813
2015	59	804,391	56,388	-108,432	752,347	9,544,160
2016	60	821,568	57,592	-110,747	768,413	10,312,573
2017	61	846,322	59,327	-114,084	791,565	11,104,138
2018	62	871,069	61,062	-117,420	814,711	11,918,849
2019	63	897,201	62,894	-120,943	839,152	12,758,001
2020	64	912,704	63,981	-123,033	853,652	13,611,653
2021	65	910,453	63,822	-122,729	851,546	14,463,199
2022	66	908,208	63,666	-122,427	849,447	15,312,646
2023	67	905,960	63,508	-122,124	847,344	16,159,990
2024	68	903,730	63,352	-121,823	845,259	17,005,249
2025	69	901,491	63,194	-121,521	843,164	17,848,413
2026	70	899,274	63,039	-121,222	841,091	18,689,504
2027	71	897,051	62,884	-120,923	839,012	19,528,516
2028	72	894,834	62,728	-120,624	836,938	20,365,454
2029	73	892,625	62,573	-120,326	834,872	21,200,326
2030	74	890,424	62,419	-120,029	832,814	22,033,140
2031	75	888,225	62,265	-119,733	830,757	22,863,897
2032	76	886,027	62,110	-119,437	828,700	23,692,597
2033	77	883,844	61,957	-119,142	826,659	24,519,256
2034	78	881,656	61,804	-118,847	824,613	25,343,869
2035	79	647,879	45,416	-87,334	605,961	\$25,949,830
JOHN RYAN		\$27,412,020	\$1,921,584	-\$3,383,774	\$25,949,830	

LOSS OF PAST HOUSEHOLD SERVICES
2001 - 2019

YEAR	AGE	HOUSEHOLD SERVICES	CUMULATE
****	***	*****	*****
2001	45	\$3,203	\$3,203
2002	46	10,748	13,951
2003	47	11,314	25,265
2004	48	11,813	37,078
2005	49	12,172	49,250
2006	50	12,646	61,896
2007	51	13,162	75,058
2008	52	13,549	88,607
2009	53	13,692	102,299
2010	54	14,754	117,053
2011	55	14,830	131,883
2012	56	15,701	147,584
2013	57	15,701	163,285
2014	58	16,104	179,389
2015	59	16,500	195,889
2016	60	16,853	212,742
2017	61	17,361	230,103
2018	62	17,868	247,971
2019	63	18,404	\$266,375
JOHN RYAN		\$266,375	

PRESENT VALUE OF FUTURE HOUSEHOLD SERVICES
2020 - 2035

YEAR	AGE	HOUSEHOLD SERVICES	DISCOUNT FACTOR	PRESENT VALUE	CUMULATE
****	***	*****	*****	*****	*****
2020	64	\$18,956	0.98765	\$18,722	\$18,722
2021	65	19,146	0.97546	18,676	37,398
2022	66	19,337	0.96342	18,630	56,028
2023	67	19,530	0.95152	18,583	74,611
2024	68	29,254	0.93978	27,492	102,103
2025	69	29,547	0.92817	27,425	129,528
2026	70	29,842	0.91672	27,357	156,885
2027	71	30,140	0.90540	27,289	184,174
2028	72	30,441	0.89422	27,221	211,395
2029	73	30,745	0.88318	27,153	238,548
2030	74	31,052	0.87228	27,086	265,634
2031	75	31,363	0.86151	27,020	292,654
2032	76	31,677	0.85087	26,953	319,607
2033	77	31,994	0.84037	26,887	346,494
2034	78	32,314	0.82999	26,820	373,314
2035	79	23,964	0.82244	19,709	\$393,023
JOHN RYAN				\$393,023	

Table 12

PRESENT VALUE OF NET HOUSEHOLD SERVICE LOSS
2001 - 2035

YEAR	AGE	HOUSEHOLD SERVICES	CUMULATE
****	***	*****	*****
2001	45	\$3,203	\$3,203
2002	46	10,748	13,951
2003	47	11,314	25,265
2004	48	11,813	37,078
2005	49	12,172	49,250
2006	50	12,646	61,896
2007	51	13,162	75,058
2008	52	13,549	88,607
2009	53	13,692	102,299
2010	54	14,754	117,053
2011	55	14,830	131,883
2012	56	15,701	147,584
2013	57	15,701	163,285
2014	58	16,104	179,389
2015	59	16,500	195,889
2016	60	16,853	212,742
2017	61	17,361	230,103
2018	62	17,868	247,971
2019	63	18,404	266,375
2020	64	18,722	285,097
2021	65	18,676	303,773
2022	66	18,630	322,403
2023	67	18,583	340,986
2024	68	27,492	368,478
2025	69	27,425	395,903
2026	70	27,357	423,260
2027	71	27,289	450,549
2028	72	27,221	477,770
2029	73	27,153	504,923
2030	74	27,086	532,009
2031	75	27,020	559,029
2032	76	26,953	585,982
2033	77	26,887	612,869
2034	78	26,820	639,689
2035	79	19,709	\$659,398
JOHN RYAN		\$659,398	

Table 13

LOSS OF PAST RVL TO JOHN RYAN
2001 - 2019

YEAR	AGE	RVL	CUMULATE
*****	***	*****	*****
2001	45	\$29,936	\$29,936
2002	46	100,782	130,718
2003	47	102,677	233,395
2004	48	106,024	339,419
2005	49	109,650	449,069
2006	50	112,436	561,505
2007	51	117,023	678,528
2008	52	117,128	795,656
2009	53	120,314	915,970
2010	54	122,119	1,038,089
2011	55	125,734	1,163,823
2012	56	127,921	1,291,744
2013	57	129,840	1,421,584
2014	58	130,827	1,552,411
2015	59	131,782	1,684,193
2016	60	134,510	1,818,703
2017	61	137,348	1,956,051
2018	62	139,971	2,096,022
2019	63	142,771	\$2,238,793
JOHN RYAN		\$2,238,793	

Table 14

PRESENT VALUE OF FUTURE RVL TO JOHN RYAN
2020 - 2035

YEAR	AGE	RVL	DISCOUNT FACTOR	PRESENT VALUE	CUMULATE
****	***	*****	*****	*****	*****
2020	64	\$145,626	0.98765	\$143,828	\$143,828
2021	65	145,626	0.97546	142,052	285,880
2022	66	145,626	0.96342	140,299	426,179
2023	67	145,626	0.95152	138,566	564,745
2024	68	145,626	0.93978	136,856	701,601
2025	69	145,626	0.92817	135,166	836,767
2026	70	145,626	0.91672	133,498	970,265
2027	71	145,626	0.90540	131,850	1,102,115
2028	72	145,626	0.89422	130,222	1,232,337
2029	73	145,626	0.88318	128,614	1,360,951
2030	74	145,626	0.87228	127,027	1,487,978
2031	75	145,626	0.86151	125,458	1,613,436
2032	76	145,626	0.85087	123,909	1,737,345
2033	77	145,626	0.84037	122,380	1,859,725
2034	78	145,626	0.82999	120,868	1,980,593
2035	79	106,925	0.82244	87,939	\$2,068,532
JOHN RYAN				\$2,068,532	

Table 15

PRESENT VALUE OF NET RVL TO JOHN RYAN
2001 - 2035

YEAR	AGE	RVL	CUMULATE
****	***	*****	*****
2001	45	\$29,936	\$29,936
2002	46	100,782	130,718
2003	47	102,677	233,395
2004	48	106,024	339,419
2005	49	109,650	449,069
2006	50	112,436	561,505
2007	51	117,023	678,528
2008	52	117,128	795,656
2009	53	120,314	915,970
2010	54	122,119	1,038,089
2011	55	125,734	1,163,823
2012	56	127,921	1,291,744
2013	57	129,840	1,421,584
2014	58	130,827	1,552,411
2015	59	131,782	1,684,193
2016	60	134,510	1,818,703
2017	61	137,348	1,956,051
2018	62	139,971	2,096,022
2019	63	142,771	2,238,793
2020	64	143,828	2,382,621
2021	65	142,052	2,524,673
2022	66	140,299	2,664,972
2023	67	138,566	2,803,538
2024	68	136,856	2,940,394
2025	69	135,166	3,075,560
2026	70	133,498	3,209,058
2027	71	131,850	3,340,908
2028	72	130,222	3,471,130
2029	73	128,614	3,599,744
2030	74	127,027	3,726,771
2031	75	125,458	3,852,229
2032	76	123,909	3,976,138
2033	77	122,380	4,098,518
2034	78	120,868	4,219,386
2035	79	87,939	\$4,307,325
JOHN RYAN		\$4,307,325	

SUMMARY OF LOSSES FOR JOHN RYAN
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<u>LOSS OF WAGES & BENEFITS</u>	<u>PAST LOSS</u>	<u>FUTURE LOSS</u>	<u>NET LOSS</u>
Full-Time Employment to age 67	\$12,757,950	\$3,435,685	\$16,193,634
 <u>LOSS OF HOUSEKEEPING AND HOME MANAGEMENT SERVICES</u>	 \$266,374	 \$393,094	 \$659,467
 <u>LOSS OF VALUE OF LIFE</u>	 \$2,238,794	 \$2,068,849	 \$4,307,643
 TOTAL:	 \$15,263,117	 \$5,897,627	 \$21,160,744

ASSUMPTIONS USED FOR ANALYSIS**First Name:** John**Sex:** M**Last Name:** Ryan**Marital Status:** M**Date of Birth:** 6/9/1956**Children Under 22:** Y

Age on September 11, 2001: 45.3
 Remaining Life Expectancy on
 September 11, 2001: 34.0
 Total Life Expectancy: 79.3

Laura Ryan Age 16
 Kristen Ryan Age 14
 Colin Ryan Age 14

Age on January 1, 2020 63.6
 Remaining Life Expectancy on
 January 1, 2020 15.7
 Age 67 Year: 2023

Wage Loss Assumptions**Occupation:** Senior Vice President, Trading**Employer:** Keefe, Bruyette, and Woods**Wage Assumption Description:**

Mr. Ryan began working at Keefe, Bruyette, and Woods (KBW) in July of 1991. By September 2001 he was a Senior VP for trading with KBW. Mr. Ryan held a MBA degree from Iona University and a Bachelor's degree from Holy Cross. Records from KBW indicate that as of 2001 his base salary was \$5,769.24 bi-weekly, or \$150,000 annually. Mr. Ryan also received bonuses in his employment with KBW. His 1996 total income was \$444,084, including \$165,519 in wages and \$278,565 in bonus; 1997 total income was \$524,412, including \$135,102 in wages and \$389,310 in bonus; 1998 total income was \$531,289, including \$156,289 in wages and \$375,000 in bonus; 1999 total income was \$492,916, including \$145,356 in wages and \$347,500 bonus; and 2000 total income was \$505,215, including \$145,215 in wages and \$360,000 bonus. I illustrate Mr. Ryan's wage loss at \$526,352 in year 2000 dollars based on his average real wages from 1996 to 2000.

Mr. Ryan's benefits at KBW included insurance with an employer contribution of \$10,090 in 2001, which is equal to 1.85% of his estimated 2001 wages. The 2000 KBW contribution to Mr. Ryan's profit-sharing retirement plan was \$22,363, which is equal to 4.25% of his wage loss in year 2000 dollars. Legally-required employer Social Security contributions of the maximum of \$4,985 in 2001 is equal to 0.91% of wages. Fringe benefits for Mr. Ryan total 7.01% of wages.

2001 Wage Base: \$526,352 In Year 2000 Dollars
Fringe Benefits: 7.01% Of Wages

Personal Consumption Rate: Varies 6.5% for 5-Person; 8.8% for 4-Person; & 12.6% for 2-Person

Based on 2019 Wages of : \$897,201

Household Service Hours

Hours While Working: 13.01 Hours Per Week, 2001 to 2009
 13.85 Hours Per Week, No Children
 Hours Upon Retirement: 20.54 Hours Per Week

SEG

Smith Economics Group, Ltd.

A Division of Corporate Financial Group

Economics / Finance / Litigation Support

Stan V. Smith, Ph.D.
President

S T A N V . S M I T H , P H . D .

Smith Economics Group, Ltd. -- Consultants and Experts in Economics and Finance. President, 11/85 to present. Assisted in the successful resolution of thousands of lawsuits on behalf of clients that include many dozens of the nation's largest law firms, the U.S. Department of Justice, as well as thousands of other prominent plaintiff and defense law firms in almost every state. Firm provides economic and financial consulting and economic legal analysis in federal and state courts on damages of every sort: Business Damages including antitrust damages, patent valuation, breach of contract losses, and others commercial losses; Business Valuations; Personal Injury and Wrongful Death losses including lost wages, benefits, services, and other injury losses; Hedonic Damages; Wrongful Discharge, defamation and employment discrimination; Identity Theft and other credit damages; Product Liability; Pension Fund Evaluation and Withdrawal liability, Security Losses.

DePaul University. -- Adjunct Professor, College of Law, 1990 to 1994. Created and taught a full three-credit course in Advanced Remedies - Analysis of Economic Damages in Litigation, based on my textbook on Forensic Economics; delivered lectures to other courses in subsequent years. This was the first course created nationwide in the area of Forensic Economics.

Ibbotson Associates, Inc. -- Economic and Financial Consultants. Principal and Managing Director; Originator of SBBI Subscription Services, 11/81 to 11/85. Firm provides consulting to hundreds of the nation's most prominent money managers, law firms, brokerage firms, and pension funds.

Seaquest International, Inc. -- Founder and President, 7/77 to 11/81. Developed and financed sophisticated research, search, and recovery technologies for ancient underwater artifacts.

The December Group, Ltd. -- Investment Banking Consultants. Associate Economic Analyst 12/74 to 7/77. Firm specialized in mergers and acquisitions, leveraged buy-outs, divestitures and financing specialized start-ups with venture capital.

JPMorgan Chase Bank - Chicago. -- Staff Economist, 3/74 to 12/74. Analyzed bank credit and service pricing policies.

Federal Reserve System. -- Staff Economist at Board of Governors, Washington, D.C. 9/73 to 2/74.

University of Chicago. - Adjunct Professor, Public Policy Economics, 3/73 to 6/73. Research Assistant in Economics, 3/70 to 6/73.

Midlothian Manufacturing Co. -- Vice President, 9/68 to 3/73. Responsible for marketing to retail and industrial clients; production control.

SEG

EDUCATIONAL BACKGROUND:

University of Chicago, Chicago IL. Ph.D. in Economics, 1997; Support Areas in Finance and Econometrics. Honors: Allied Chemical Scholar and Federal Reserve Internship. The University of Chicago is recognized as a world preeminent institution for the study of Economics and the home of the Law and Economics movement. Prof. Gary Becker, Nobel 1992, Thesis Advisor; Research Assistant to Prof. Eugene Fama, Nobel 2013.

University of Chicago, Chicago, IL. Master's Degree, 1972, Graduate School of Business; Field of Concentration in Economics.

Cornell University, Ithaca, NY. Bachelor of Science, Operations Research, 1968; Field of Concentration in Statistics, Computer Science and Industrial Engineering, Honors: John McMullen Scholar.

PROFESSIONAL ACTIVITIES:

American Academy of Economic & Financial Experts, Journal of Legal Economics, Manuscript Referee, 199x-2008.

American Arbitration Association, Arbitrator, 1994 to 1996;

American Board of Disability Analysts, Professional Advisory Council, 2002 to present, Member & Diplomat, 2001 to present;

American College of Forensic Examiners, Fellow, Diplomate and Board Certified Forensic Examiner, 1996 to present;

American Economic Association, Member, 1985 to present;

American Finance Association, Member, 1985 to present;

Collegium of Pecuniary Damages Experts, Charter Member, 2008-2011;

Journal of the American Rehabilitation Economics Association: The Earnings Analyst, Manuscript Referee, 1998 to 2002;

Journal of Forensic Economics, Board of Editors, 1990 to 2001;

Journal of Forensic Economics, Manuscript Referee, 1990 to 2003;

National Academy of Economic Arbitrators, Founder and Charter Member, 1989 to 2005;

National Association of Forensic Economics, Vice President, 2000 to 2003, Board of Editors, 1990 to 2000, Member, 1988 to present;

National Futures Association's Panel of Arbitrators, Arbitrator, 1994 to present;

PUBLICATIONS:

Author, "Historical Returns on Investment Instruments," Handbook of Modern Finance 1985, with Roger Ibbotson and Larry Siegel; Dennis Logue, ed., Warren, Gorham & Lamont, New York.

Author, 1988 Supp.to Vol 13, Am Jur Proof of Facts 2d on Hedonic Damages.

Author, "Economist Proposes Relief From Present Value Ruling," Chicago Daily Law Bulletin, June 8, 1988.

Author, "Hedonic Damages" Illinois Tort Report, June, 1988.

Author, "Hedonic Damages in Wrongful Death Cases," the ABA Journal, Sept, 1988. 7B8

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Author, "Hedonic Damages," The Audio Lawyer, Vol. 6 No. 8, ALI-ABA, February, 1989. 1197

Author, "The Hedonic Value of Life: Economic Expert Witness Testimony in Injury and Wrongful Death," Expert Evidence Reporter, Vol. 1, No. 1, September 1989, Shepard's McGraw-Hill.

Co-author: Economic/Hedonic Damages: A Practice Book for Plaintiff and Defense Attorneys, with M. L. Brookshire, Anderson Publishing Co., Cinn., Ohio, 1990.

Co-author, "Hedonic Damages and Personal Injury: A Conceptual Approach," Journal of Forensic Economics, 3(1), 1990, pp. 1-8.

Author, "Hedonic Damages in the Courtroom Setting - A Bridge Over Troubled Waters," Journal of Forensic Economics, 3(3), 1990, pp. 41-49.

Author, "Admissibility of Hedonic Damages Testimony," The Audio Litigator, Vol. 1, No. 1, April, 1990, ALI-ABA.

Author, "Hedonic Damages," with G. Magnarini, Wisconsin Lawyer, Vol. 64, No. 2, February 1991.

Author, "Hedonic Damages: Assessing the Loss of Enjoyment of Life," California State Bar Bulletin, Vol. 1, No. 8, June 1991.

Co-author, "Hedonic Damages and Personal Injury: A Conceptual Approach," Journal of Forensic Economics, 3(1), 1990, pp. 1-8; Reprinted in A Hedonics Primer for Economists and Attorneys, Compiled and Edited by John O. Ward, Lawyers & Judges Publishing Co., Chapter 7, pp. 121-129, 1992.

Co-author: 1991/1992 Cumulative Supplement to Economic/Hedonic Damages: A Practice Book for Plaintiff and Defense Attorneys, with M. L. Brookshire, Anderson Publishing Co., Cinn., Ohio, 1992.

Author, "Hedonic Damages in the Courtroom Setting - A Bridge Over Troubled Waters," Journal of Forensic Economics, 3(3), 1990, pp. 41-49; Reprinted in A Hedonics Primer for Economists and Attorneys, Compiled and Edited by John O. Ward, Lawyers & Judges Publishing Co., Chapter 6, pp. 111-120, 1992.

Author, "Spotting Bias in Plaintiffs' Economic Loss Reports: A Primer for both Sides," Illinois Bar Journal, Vol 80, No. 12, December, 1992, pp. 635-638.

Author, "Life Values: Measuring the Loss of Enjoyment of Life - Economic Analysis whose time has come," The Brief, Summer 1993, Vol. 22, No. 4 pp. 24-27, 62-63, The American Bar Association.

Co-author: 1992/1993 Cumulative Supplement to Economic/Hedonic Damages: A Practice Book for Plaintiff and Defense Attorneys, with M. L. Brookshire and Charles W. de Seve, Anderson Publishing Co., Cinn., Ohio, 1993.

Author, "Evaluating the Loss of Enjoyment of Life - Hedonic Damages," in Charles N. Simkins, ed., Analysis, Understanding and Presentation of Cases Involving Traumatic Brain Injury, National Head Injury Foundation, Wash., DC, 1993.

Author, "Hedonic Damages in Personal Injury and Wrongful Death Litigation," in Gaughan and Thornton, eds. Litigation Economics, Contemporary Studies in Economic and Financial Analysis, Vol 74, JAI Press, Greenwich, CT, 1993.

Author, "Economic Evaluation of the Loss of Enjoyment of Life - Hedonic Damages," in Damages in Tort Actions, Ch. 124, Release 29 - February 1994, Pub. 309, Mathew Bender & Co., New York.

Author, "Measuring the Loss of Enjoyment of Life in Personal Injury Cases - Hedonic Damages," Journal of the Massachusetts Academy of Trial Attorneys, Vol 2, No. 1, July, 1994, pp. 65-67.

Author, 3-Part Series, "Two Plus Two Equals -- What?" October, 1994, p. 21; "Detecting Bias in Economics," November, 1994, pp. 14 & 21; "Striving for Economic Fairness," December, 1994, pp. 24-25, California Bar Journal, The Experts.

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- Author, "Measuring the Loss of Enjoyment of Life in Personal Injury Cases - Hedonic Damages," MTLA News, Vol. 6, No. 4, December, 1994, pp. 3-5, Maine Trial Lawyers Association.
- Author, "Hedonic Damages: Measuring The Loss of Enjoyment of Life in Personal Injury Cases," The Prairie Barrister, Vol. 1, No. 1, Winter, 1995, pp. 3, 4, & 12, Nebraska Association of Trial Attorneys.
- Author, "Measuring The Loss of Enjoyment of life in Personal Injury Cases in Ohio - Hedonic Damages," Ohio Trial, Vol. 6, Issue 3, Summer 1995, pp. 13- 16, Ohio Academy of Trial Lawyers Education Foundation.
- Author, "Measuring The Loss of Enjoyment of Life in Personal Injury Cases - Hedonic Damages," The Advocate, Vol. 22, No. 5, September/October, 1995, pp. 14-16, 22, The Kentucky Academy of Trial Attorneys.
- Author, "Damages for the Value of Life," North Dakota Trial Lawyers The Pleader, Vol. 18, No. 4, September 1995, pp. 9-11, 24.
- Author, "Hedonic Damages - Measuring The Loss of Enjoyment of Life in Personal Injury Cases," Law Reporter, The Journal of the Hawaii Trial lawyers Association, Vol. 7, No. 9, September 1995, pp. 8-10.
- Author, "Measuring The Loss of Enjoyment of Life in Personal Injury Cases in Arizona - Hedonic Damages," Advocate, Arizona Trial Lawyers Association, November 1995, pp. 5, 7, 15.
- Co-author, "Hedonic Damages and Personal Injury: A Conceptual Approach," Journal of Forensic Economics, 3(1), 1990, pp. 1-8; Reprinted in A New Hedonics Primer for Economists and Attorneys, Compiled and Edited by Thomas R. Ireland and John O. Ward, Lawyers & Judges Publishing Co., Reading 25, 1996, pp. 325-334.
- Author, "Hedonic Damages - Measuring the Loss of Enjoyment of Life in P.I. Cases," In Brief, Iowa Trial Lawyers Association, Vol. 7/Issue 1, January-February 1996, pp. 13-15.
- Author, "Hedonic Damages in Personal Injury and Wrongful Death Litigation," in Gaughan and Thornton, eds. Litigation Economics, Contemporary Studies in Economic and Financial Analysis, Vol 74, JAI Press, Greenwich, CT, 1993; Reprinted in A New Hedonics Primer for Economists and Attorneys, Compiled and Edited by Thomas R. Ireland and John O. Ward, Lawyers & Judges Publishing Co., Reading 3, 1996, pp. 15-36.
- Author, "Measuring the Loss of Enjoyment of Life in Personal Injury Cases and Wrongful Death Cases in New Mexico - Hedonic Damages," The New Mexico Trial Lawyer, New Mexico Trial Lawyers' Foundation, Vol. XXIV, No. 3, March, 1996, pp. 1, 60-63.
- Author with Introduction by Darrel W. Aherin, "Measuring The Loss of Enjoyment of Life in Personal Injury Cases - Hedonic Damages," Idaho Trial Lawyers Association Journal, Volume 25, Number 2, Summer 1996, pp. 32-36.
- Author, "The Value of Life to Close Family Members: Calculating the Loss of Society and Companionship," The New Hedonics Primer for Economists and Attorneys, Second Edition, Edited by Thomas R. Ireland and John O. Ward, Lawyers & Judges Publishing Co., 1996, pp. 377-384.
- Author, "Pseudo-Economists - The New Junk Scientists," Federation of Insurance & Corporate Counsel Quarterly, Vol. 47, No. 1, Fall 1996, pp. 95-105.
- Author with Introduction by Darrel W. Aherin, "Measuring The Loss of Enjoyment of Life in Personal Injury Cases in Idaho - Hedonic Damages," Western Chronicle, N/D 1996, Western Trial Lawyers Association, pp. 32, 35-36.
- Author, "Measuring The Loss of Enjoyment of Life in Personal Injury Cases in Washington - Hedonic Damages," Trial News, Vol. 32, Number 5, January 1997, Washington State Trial Lawyers Association, pp. 29-30.

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Author, "Jury Verdicts in Drunken Driving Cases," University of Chicago Ph.D. Thesis, UMI Dissertation Services, Ann Arbor, MI, 1997.

Author, "The Value of Life to Close Family Members: Calculating the Loss of Society and Companionship," American Rehabilitation Economics Association 1997 Monograph, pp. 10-16.

Author, Abstract: "Jury Verdicts in Drunken Driving Cases," Journal of Forensic Economics, 11(1), 1998, p. 67-68.

Author, "Why Juries Can Be Trusted," Voir Dire, Vol. 5, Issue 3, Summer 1998, American Board of Trial Advocates, pp. 19-21 & 25.

Author, "Measuring The Loss of Enjoyment of Life in Personal Injury Cases - Hedonic Damages," The Neurolaw Letter, Vol. 9, No. 8, April 2000, pp. 45, 48-49.

Author, "Jury Verdicts and the Dollar Value of Human Life," Journal of Forensic Economics, 13(2), 2000, pp. 169-188.

Author, "Hedonic Damages," Izabela Z. Schultz, Douglas O. Brady, Steven Carella, Eds., Psychological Injuries at Trial, Torts Section, American Bar Association, 2003.

Contributor, "Economic Foundations of Injury and Death Damages," Roger T. Kaufman, James D. Rodgers, Gerald D. Martin, Edward Elgar Publishing, Inc., 2005.

Author, "Don't Overlook the Loss of Expanded Family Services," Trial, Vol. 42, No. 3, "Good Counsel" Column, March 2006, pg. 73.

Co-author, "What is Your Value?" Chapter 2 in Six-Figure Salary Negotiation, Michael Zwell, Platinum Press, 2008.

Co-Author, "Jury Verdicts in Drunken Driving Cases," Review of Law & Economics, Berkeley Press, 2008.

Contributor, "Determining Economic Damages," Gerald D. Martin, James Publishing Inc., 2008 & previous years' editions.

Co-Author, "Estimating the Value of Family Household Management Services: Approaches and Markups," Forensic Rehabilitation & Economics, Vol 3, No. 2, 2010, with David A. Smith and Stephanie R. Uhl, pp. 85-94.

Co-Author, "Credit Damage: Causes, Consequences and Valuation," Forensic Rehabilitation & Economics, Vol 4, No. 1, 2011, with David A. Smith and Stephanie R. Uhl, pp. 27-32.

Co-Author, "Reply to Tinari's Comment on 'Estimating the Value of Family Household Management Services: Approaches and Markups,'" Forensic Rehabilitation & Economics, Vol 4, No. 1, 2011, with David A. Smith and Stephanie R. Uhl, pp. 37-38.

Co-Author, "A Response to Jayne's Comment on 'Estimating the Value of Family Household Management Services: Approaches and Markups,'" Forensic Rehabilitation & Economics, Vol 4, No. 1, 2011, with David A. Smith and Stephanie R. Uhl, pp. 39-40.

Co-Author, "A Reply to Mr. Climo's Credit Damage Comment," Forensic Rehabilitation & Economics, Vol 5, No. 1, 2012, with David A. Smith and Stephanie R. Uhl, pp. 75-76.

Contributor, "Lost Earnings Report: Economist Expert," How To Write An Expert Witness Report, James J. Mangraviti, Jr., Steven Babitsky, Nadine Nasser Donovan, SEAK, Inc, The Expert Witness Training Company, 2014, pp. 527-542.

Author, "Economic Damages in Nevada," Vegas Legal Magazine, Vol 1, Issue 1, Summer 2015, pp. 24-25.

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Originator of Ibbotson Associates' Stocks, Bonds, Bills, and Inflation (SBBI) Yearbook and Companion Services published by Duff & Phelps and available on various Morningstar, Inc. software platforms. SBBI is the authoritative compendium of U. S. financial and investment performance data from 1926 to the present. SBBI is widely relied upon and regarded as the standard reference in courts of law and by the academic, actuarial and investment community. From 1993 to present.

PROFILES:

The Wall Street Journal, page 1 feature article with photo;
The Best Lawyer's in America: Directory of Expert Witnesses;
National Law Journal, page 1 feature article with photo;
Who's Who in the World;
Who's Who in America;
Who's Who in Finance and Industry;
Who's Who in Science and Engineering;
Who's Who in the Midwest;
Who's Who of Emerging Leaders of America;
Chicago Daily Law Bulletin, page 1 feature article;
Chicago Reader, Section 1 feature article with photo;
Like Judgment Day: The Ruin and Redemption of A Town Called Rosewood, D'Orso, Michael, 1996, Pg. 237.

NATIONAL PRESENTATIONS:

Arizona: Brain Injury Association 13th Annual Conference for Attorneys, Phoenix, September 16, 1999;
 California: American Bar Association Annual Meeting, San Francisco, August 10, 1992;
 California: American Trial Lawyers Association 2005 Winter Convention, "Making Tangible the Intangible: Replacement Household/Family Services", Palm Springs, January 29, 2005;
 Canada: Association of Trial Lawyers of America Annual Meeting, Economic Damages, Toronto, 1991;
 District of Columbia: Larry King Live, Washington, May 22, 1989;
 District of Columbia: National Institute for Trial Advocacy (NITA), Seventh Annual Washington DC Masters Advocacy Program, "Direct and Cross Examination of an Economic Witness," Washington, October 15, 1991;
 District of Columbia: National Association. of Protection & Advocacy Systems, Inc., 19th Annual Conference, "Assessment and Proof of Damages," Washington, May 30, 1996;
 District of Columbia: American Bar Association Annual Meeting, Washington, TIPS Aviation and Space Law, "Beyond the Horizon: What's Next in Aviation and Space Law Litigation," October 18, 2013;
 Florida: Association of Trial Lawyers of America 1992 Winter Convention, Boca Raton, "Cutting Edge Developments in Economic Testimony," January 15, 1992;
 Florida: Brain Injury Association 10th Anniversary Trial Lawyers Conference, Palm Beach, September 19, 1996;

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Florida: National Association of Consumer Advocates, 2003 NACA-FCRA Conference, Building on Our Success, Panel of Experts, "What the Experts Have Learned, A View From the Witness Box," Orlando, March 9, 2003;

Georgia: National Academy of Economic Arbitrators Annual Meeting, Differences in Economic Assumptions in Personal Injury Wage Calculations, Atlanta, December, 1989;

Georgia: National Association of Forensic Economics Annual Meeting, Value of Life, Atlanta, December, 1989;

Hawaii: American Bar Association Annual Meeting in Honolulu, HI, Speaker and Expert Witness at Mock Trial, Honolulu, August, 1989;

Idaho: Inner Circle of Advocates Annual Meeting, Sun Valley, August, 1989;

Illinois: University of Chicago 1982 Annual Management Conference on Venture Capital;

Illinois: National Association of Consumer Advocates, 2009 NACA-FCRA Fair Credit Reporting Act Conference, "Credit Damages: How to Estimate Them," Chicago Hyatt Regency, May 9, 2009;

Illinois: American Rehabilitation Economics Association Annual Conference, "Hedonic Damages: A Basic Approach," Chicago, June 13, 2009;

Illinois: National Association of Consumer Advocates, 2010 NACA Auto Fraud Litigation Conference, Credit Damages: How to Estimate Them," Chicago Hyatt Regency, May 16, 2010;

Illinois: SEAK 19th Annual National Expert Witness Conference, "Handling the Toughest Questions: Depositions and Trial," Rosemont, June 25, 2010;

Illinois: National Consumer Law Center 20th Annual Consumer Rights Litigation Conference, "Expert Witnesses at Trial - Handling Experts in the Courtroom," Fairmont Chicago Millennium Park Hotel, November 5, 2011;

Internet: Credit Bureau Strategy Consulting, Webinar Presentation, "The Economics of Credit Damage," September 14, 2009

Louisiana: American Bar Association, National Institute Transportation Megaconference, New Orleans, March 5, 1993;

Louisiana: Defense Research Institute, Medical Malpractice Seminar, New Orleans, May 6, 1994;

Louisiana: Association of Trial Lawyers of America 2001 Winter Convention, Litigation at Sunrise, "Measuring the Loss of Enjoyment of Life in Personal Injury Cases -- Hedonic Damages Over the Last Ten Years," New Orleans, February 12, 2001;

Louisiana: National Association of Consumer Advocates, 2005 NACA-FCRA Conference, "Litigating Accuracy Issues with Furnishers of Credit Data," Speaker on Economic Damages, New Orleans, June 5, 2005;

Louisiana: National Association of Minority and Women-Owned Law Firms, Trials Practice Area Committee Session: Challenging Experts? "Tactics for Mastering Expert Examinations," New Orleans, February 21, 2016;

Louisiana: National Association of Minority and Women-Owned Law Firms, Emerging Leaders Session: Ready for Action? "Hone Your Expert Cross Examination Techniques," New Orleans, February 22, 2016;

Michigan: Northwest #255 Air Disaster Steering Committee Meeting, Detroit, June, 1989;

Nevada: American Rehabilitation Economics Association Conference, Mock Trial Presided by Nevada Supreme Court Justice William Maupin, Reno, May 15, 1999;

Nevada: National Association of Consumer Advocates, 2006 NACA-FCRA Conference, "Experts on Damages," Washington, May 6, 2006;

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Nevada: National Association of Consumer Advocates, 2006 NACA-FCRA Conference, "Breakfast with the Stars," Washington, May 7, 2006;

Nevada: Brain Injury Association of America; Mastering the Science and Trial Strategies, "Making Tangible the Intangible: Expanding the Traditional Measures," Las Vegas, April 4, 2008;

Nevada: Internet Law Leadership Summit at Aria Resort & Casino, "Calculating Complex Financial Damages," Las Vegas, November 30, 2012;

New York: Eastern Economic Association Annual Conference, "Estimating the Value of Family Household Management Services: Approaches and Markups," New York City, February 28, 2009;

New York: Eastern Economic Association Annual Conference, "Credit Damage: Causes, Consequences and Valuation," New York City, February 28, 2009;

Oregon: National Crime Victim Law Institute at Lewis & Clark Law School, Ninth Annual Crime Victim Law Conference, Due Process for Victims: Meaningful Rights in Every Case, Portland, June 11, 2010;

Pennsylvania: Swiss Re American Annual Claims Conference, "Looking to the Third Millennium," Hershey, June 3, 1996;

Texas: MADD Advanced Victim Assistance Institute Seminar, Dallas, November 12, 1994;

Texas: National Norplant Litigation Conference 1995, Houston, June 22, 1995.

REGIONAL PRESENTATIONS:

Hawaii: Western Trial Lawyers Association 1994 Annual Convention, "Making it Work-Trial Practice in the 90's," Maui, June 16, 1994;

Illinois: GSA Seminar "Selling your Business", Chicago, October, 1987;

Illinois: Society of Trial Lawyers, "How to Depose an Economist," Chicago, May 7, 2009;

Louisiana: Southern Trial Lawyers Association Annual Meeting, New Orleans, 1988;

Louisiana: Southern Trial Lawyers Association 1996 Mardi Gras Conference, ATLA Traumatic Brain Injury Litigation Group, "Economic Implication of a Closed Head Injury," New Orleans, February 18, 1996;

Michigan: Advocacy Institute, Continuing Legal Education, 46th Annual Seminar, "Wrongful Death of an Older Person," Ann Arbor, May 12, 1995;

Michigan: Lorman Education Services, "Direct Examination of Experts in a Traumatic Brain Injury Case," Novi, August 21, 1997;

Michigan: Lorman Education Services, "Direct Examination of Experts in a Traumatic Brain Injury Case," Livonia, August 26, 1998;

New York: Eastern Finance Association Special Session on Pension Fund Asset Reversions, 1985;

New York: American Reinsurance Company for Senior Claims Executives Annual Meeting, August, 1989;

Ohio: Anderson Publishing Co., Proof of Economic Damages Seminar, Cincinnati, November 2, 1990.

STATEWIDE PRESENTATIONS:

California: Arizona State Bar Fourth Annual "CLE By The Sea," San Diego, July 22-23, 1994;

Connecticut Trial Lawyer Association, "All About Experts," Hartford, November 21, 1992;

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Florida State Bar Association, National Institute of Trial Advocacy (NITA),
Advanced Trial Advocacy Seminar, Speaker and Expert Witness at Mock trial on
Economic Damages, Gainesville, May 14, 1991;
Georgia Brain Injury Association & Institute of Continuing Legal Education in
Georgia, "Hedonic Damages: Proving Loss of Enjoyment of Life in Non-Fatal
Injury Cases," Atlanta, March 29, 2002;
Idaho Trial Lawyers Association Annual Meeting, Twin Falls, February 23, 1996;
Illinois State Bar Association CLE Series, April, 1989;
Illinois: Insurance Group of the Union League Club of Chicago, "Toward A More
Rational Approach to Liability Judgments," Chicago, March 19, 1991;
Indiana State Bar Association Annual Meeting, October, 1989;
Indiana Trial Lawyers Association Annual Meeting, November 30, 1990;
Indiana State Bar Association "Masters in Trial" Spring Meeting, South Bend, April
18, 1997;
Iowa Trial Lawyers Association Annual Meeting, Des Moines, November 5, 1993;
Kentucky Academy of Trial Attorneys Damages Seminar, Louisville, August 18, 1995;
Louisiana Trial Lawyer Association, Baton Rouge, "Winning with Experts" Seminar,
November 10, 1989;
Louisiana Trial Lawyer Association, "Winning With the Masters" Seminar, New
Orleans, November 21, 1995;
Louisiana Trial Lawyer Association, "Winning With the Masters" Seminar, New
Orleans, December 10, 1997;
Massachusetts Trial Lawyers Association, "Learn From the Experts," Boston, October
9, 1992;
Massachusetts Trial Lawyers Association Annual Meeting, Boston, October 29, 1993;
Michigan Trial Lawyers Association Annual Meeting, Wrongful Death Damages, May,
1990;
Michigan Head Injury Alliance Fifth Annual Seminar on Closed Head Injury,
Detroit, March 24, 1994;
Michigan Head Injury Alliance Sixth Annual Seminar on Closed Head Injury,
Detroit, March 23, 1995;
Michigan Head Injury Alliance Seventh Annual Seminar on Closed Head Injury,
Detroit, March 28, 1996;
Michigan Head Injury Alliance Eighth Annual Seminar on Closed Head Injury,
Detroit, March 27, 1997;
Michigan, Institute of Continuing Legal Education, "The Name of the Game is
Damages--Plaintiff and Defense Strategies in Negligence and Employment Cases,"
Troy, July 20, 2000;
Michigan Trial Lawyers Association Winter Seminar, "Hedonic Damages and Other
Special Economic Issues," Gaylord, February 24, 2001;
Michigan Trial Lawyers Association 13th Annual Seminar in the Snow, Litigation
Strategies and Techniques, "Loss of Society and Household Companionship and
Advisory Services," Bellaire, February 22, 2003;
Mississippi Trial Lawyers Association Annual Convention, "Shooting Stars Seminar,"
Biloxi, May 19, 1995;
Mississippi Trial Lawyers Association Annual Convention, "Taking Your Recovery to
the Next Level: Hedonic Damages," Biloxi, May 10, 2001;
Mississippi: Arkansas Trial Lawyer Association "Maximizing Damages in the Personal
Injury Case," Tunica, MS, October 24, 2003;
Missouri: Kansas Trial Lawyers Association Annual Meeting, Kansas City, December
8, 1990;

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Missouri State Bar Annual Meeting, Kansas City, September 19, 1996;
 Missouri State Bar CLE Seminar, Proving Damages in Catastrophic Injury Cases, "Hedonic Damages after September 11th and An Economist's View on Proving Economic Damages," Kansas City, April 19, 2002;
 Missouri State Bar CLE Seminar, Proving Damages in Catastrophic Injury Cases, "Hedonic Damages after September 11th and An Economist's View on Proving Economic Damages," St. Louis, May 9, 2002;
 Montana Trial Lawyer Association Fourth Annual Convention, "Proving The Intangible (Hedonic) Value of Human Life," Whitefish, July 23, 1993;
 Montana Trial Lawyer Association Seventh Annual Convention, Seminar of the Masters, Polson, August 1, 1996;
 Montana Trial Lawyer Association Spring Seminar, Scientific Evidence, "Making Tangible the Intangible: Loss of Enjoyment of Life, and Society & Companionship Damages," Billings, April 25, 2003;
 Nevada: Required Medical and Legal Education for the Traumatic Brain Injury Case, "9/11 Victim Compensation Fund Hedonic Damages: Implications for the State of Nevada," Las Vegas, October 25, 2002;
 New Hampshire Trial Lawyer Association, "Secrets & Strategies of Trial Law," Concord, October 8, 1993;
 New Mexico Trial Lawyers Association Annual Meeting, Economic Damages, Santa Fe, June 22, 1991;
 New Mexico Trial Lawyers Foundation Damages Seminar, Albuquerque, October 11, 1996;
 North Carolina, Brain Injury Association of NC, First Annual Trial Lawyers Conference, "The Use of Expert Testimony in Brain Injury Litigation," Charlotte, January 26, 1996;
 North Carolina, Brain Injury Association of NC, Second Annual Trial Lawyers Conference, "The Loss of Enjoyment of Life in Personal Injury - Hedonic Damages," Charlotte, January 24, 1997;
 North Dakota Trial Lawyers Association, Annual Meeting Trial Practice Seminar, Fargo, May 4, 1995;
 Ohio Association of Trial Lawyers Annual Meeting, Speaker and Expert Witness at Mock Trial on Wrongful Death Damages, Toledo, April, 1990;
 Ohio Head Injury Association, "Representing the Survivor of Mild Head Injury," Annual Seminar, Columbus, June 3, 1994;
 Pennsylvania: Philadelphia Trial Lawyers Association CLE Lecture Series, March 17, 1993;
 South Dakota Trial Lawyers Association Spring Seminar, April, 1989;
 Texas Trial Lawyers Association, Medical Malpractice Seminar, Wrongful Death Damages, Houston, May, 1990;
 Washington State Trial Lawyers Annual Meeting & Convention, Stevenson, July 11, 1998;
 Wisconsin Association of Trial Lawyers Annual Meeting, Wrongful Death Damages, Door County, July, 1990;
 Wisconsin Brain Injury 2nd Annual Seminar, "Identifying and Understanding Traumatic Brain Injury," Green Lake, May 31, 1997.

LOCAL PRESENTATIONS:

Alaska: Alaska Trial Lawyers Association, Anchorage, August, 1989;
 California: "Value of Life: Dismal Science from the Courtroom," Economics Department Workshop Colloquium, Pomona College, Claremont, April 17, 2006;

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Illinois: Chicago North Suburban Bar Association, May, 1988;
 Illinois: Chicago Advocates Society, June, 1988;
 Illinois: Northwest Chicago Suburban Bar Association, January, 1989;
 Illinois: Chicago Public Radio, WBEZ, February, 1989;
 Illinois: DuPage County, Bar Association, Chicago, May, 1989;
 Illinois: Sangamon County Trial Lawyers Association, Springfield, May, 1989;
 Illinois: McHenry County Bar Association, Chicago, May, 1989;
 Illinois: Chicago Bar Association Wrongful Death Seminar, Wrongful Death Damages, February, 1990;
 Illinois: Chicago Bar Association Torts Seminar, Defense Perspectives on Economic Damages, January 21, 1991;
 Illinois: Chicago Bar Association, Wrongful Death Seminar, February 11, 1993;
 Illinois: Chicago Bar Association Effective Direct and Cross-Examination of Expert Witnesses - A Demonstration, January 9, 1995;
 Illinois: Interstate National Corporation, "Cutting Edge Developments on Economic Damages - Defense Perspectives", Chicago, August 2, 1995;
 Illinois: Interstate National Corporation, "Cutting Edge Developments on Economic Damages - Defense Perspectives", Chicago, September 2, 1997;
 Illinois: Cassidy Schade & Gloor, "Catastrophic Damages...They're Back! - Limiting Damages After the Invalidity of Tort Reform," Chicago, November 18, 1998;
 Illinois: Law Bulletin Publishing Company, Legal Career Day, Economic Outlook for Lawyer Employment, Chicago, April 13, 2004;
 Illinois: Fox News Contributor WFLD TV, October 10 and October 15, 2008; February 25, March 24, April 10, April 20, June 17, August 3, August 26 and October 19, 2009;
 Michigan: American Radio Network, WFOX, Detroit, January, 1989;
 Michigan: Oakland County Bar Association Negligence Committee, Bloomfield Hills, November 5, 1996;
 Ohio: Hamilton County, Bar Association Seminar on Economic Damages, Cincinnati, January 31, 1991.

TELEVISION/VIDEO PRESENTATIONS

American Bar Association Tort and Insurance Practice Section Annual Meeting, "Hedonic Damages," San Francisco, CA, August 10, 1992;
 American Law Institute-American Bar Association, ALI-ABA Tape, "Hedonic Damages: Litigating the Loss of Enjoyment of Life," The Lawyers' Video Magazine, Vol. III Issue 20, Philadelphia, PA, December, 1991;
 CNN: Larry King Live, May 22, 1989.

PERSONAL BACKGROUND:

Born November 16, 1946, Rhinelander, Wisconsin;
 Graduated Nicolet High School 1964, Milwaukee, Wisconsin;
 Honorable Discharge U.S. Army, 1975;
 Member of Chicago Board Options Exchange, 1975-1978;
 Trustee, Wright Graduate University;
 Board Member, Wright Foundation.

Smith Economics Group, Ltd.

A Division of Corporate Financial Group

Economics / Finance / Litigation Support

Stan V. Smith, Ph.D.
President

February 11, 2020

Mr. Dennis G. Pantazis
Wiggins Childs
The Kress Building
301 19th Street North
Birmingham, AL 35203

Re: John Ryan

Dear Mr. Pantazis:

You have asked me to calculate the value of certain losses subsequent to the death of John Ryan. These losses are: (1) the loss of wages and employee benefits; (2) the loss of housekeeping and household management services; and (3) the loss of the value of life ("LVL"), also known as loss of enjoyment of life.

QUALIFICATIONS AND EXPERIENCE

I am President of Smith Economics Group, Ltd., headquartered in Chicago, IL, which provides economic and financial consulting nationwide. I have worked as an economic and financial consultant since 1974, after completing a Research Internship at the Federal Reserve, Board of Governors, in Washington, D.C. My curriculum vitae lists all my publications in the last 10 years and beyond.

I received my Bachelor's Degree from Cornell University. I received a Master's Degree and my Ph.D. in Economics from the University of Chicago; Gary S. Becker, Nobel Laureate 1992, was my Ph.D. thesis advisor. The University of Chicago is one of the world's preeminent institutions for the study of economics, and the home of renowned research in the law and economics movement.

As President of Smith Economics, I have performed economic analyses in a great variety of engagements, including damages analysis in personal injury and wrongful death cases, business valuation, financial analysis, antitrust, contract losses, a wide range of class action matters, employment discrimination, defamation, and intellectual property valuations including evaluations of reasonable royalty.

I have more than 40 years of experience in the field of economics. I am a member of various economic associations and served for three years as Vice President of the National

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Association of Forensic Economics (NAFE) which is the principal association in the field. I was also on the Board of Editors of the peer-reviewed journal, the Journal of Forensic Economics, for over a decade; I have also published scholarly articles in this journal. The JFE is the leading academic journal in the field of Forensic Economics.

I wrote the first textbook on Forensic Economic Damages that has been used in university courses such as the University of Wisconsin, Penn State University, and in various other states. As an adjunct professor, I created and taught the first course in Forensic Economics nationwide, at DePaul University in Chicago.

I am the creator and founder of Ibbotson Associates' Stock, Bonds, Bills, and Inflation (SBBI) Yearbook, Quarterly, Monthly, and SBBI/PC Services. SBBI is generally regarded by academics in the field of finance as the most widely accepted source of statistics on the rates of return on investment securities. SBBI was originally published by Ibbotson Associates, then by Morningstar, Inc., and is now currently published by Duff & Phelps. The original SBBI series generated what became a six-book set universally used for business valuation, and currently available on an online platform. These data series are widely relied upon and regarded as the most accepted and definitive scholarly references by the academic, actuarial and investment community, and in courts of law. All three publishers of the SBBI series acknowledge me as the founder in 1983, for my "invaluable role" as having "originated the idea" of SBBI, which I then implemented while Managing Director at Ibbotson Associates.

I have performed economic analysis in many thousands of cases in almost every state and federal jurisdiction since the early 1980s.

BACKGROUND

John Ryan was a 45.3-year-old, Caucasian, married male, who was born on June 9, 1956, and died on September 11, 2001. Mr. Ryan's remaining life expectancy is estimated at 34.0 years. This data is from the National Center for Health Statistics, United States Life Tables, 2017, Vol. 68, No. 7, National Vital Statistics Reports, 2019. I assume an estimated trial or resolution date of January 1, 2020.

In order to perform this evaluation, I have reviewed the following materials: (1) the September 11th Victim Compensation Fund of 2001 application and supporting documentation for John Ryan, including tax records from 1998 to 2001 and the Summary Report for Mr. Ryan from Keefe, Bruyette, and Woods; (2) additional tax records from 1996 and 1997 for John Ryan; (3)

correspondence from the September 11th Victim Compensation Fund to the family of John Ryan; and (4) the Case Information Form.

My methodology for estimating the losses, which is explained below, is generally based on past wage growth, interest rates, and consumer prices, as well as studies regarding the value of life. The effective net discount rate using statistically average wage growth rates and statistically average discount rates is 0.25 percent.

My estimate of the real wage growth rate is 1.00 percent per year. This growth rate is based on Business Sector, Hourly Compensation growth data from the Major Sector Productivity and Costs Index found at the U.S. Bureau of Labor Statistics website at www.bls.gov/data/home.htm, Series ID: PRS84006103, for the real increase in wages primarily for the last 20 years.

My estimate of the real discount rate is 1.25 percent per year. This discount rate is based on primarily the rate of return on short-term U.S. Treasury investment for the last 20 years. The data is from the statistical series H.15 Selected Interest Rates, published by the Board of Governors of the Federal Reserve System found at www.federalreserve.gov. This data is also published in the Economic Report of the President Table for "Bond yields and interest rates" for the real return on U.S. Treasury investments.

Estimates of real growth and discount rates are net of inflation based on the Consumer Price Index (CPI-U), published in monthly issues of the U.S. Bureau of Labor Statistics, CPI Detailed Report (Washington, D.C.: U.S. Government Printing Office) and available at the U.S. Bureau of Labor Statistics website at www.bls.gov/data/home.htm, Series ID: CUUR0000SA0. The rate of inflation for the past 20 years has been 2.16 percent.

I. LOSS OF WAGES AND EMPLOYEE BENEFITS - Annual Employment

Tables 1 through 9 show the loss of wages and benefits for John Ryan. Mr. Ryan began working at Keefe, Bruyette, and Woods (KBW) in July of 1991. The Summary Report for Mr. Ryan from KBW indicates that by September 2001 he was a Senior Vice President for the firm's Trading department. Mr. Ryan held a MBA degree from Iona University and a Bachelor's degree from Holy Cross University.

Payroll records from KBW indicated that as of 2001 Mr. Ryan's base salary was \$5,769.24 bi-weekly, or \$150,000 annually. In addition to his base salary Mr. Ryan received bonuses in his employment with KBW. The Summary Report from KBW indicates that Mr. Ryan's total income in 1996 was \$444,084, including \$165,519 in salary and \$278,565 in bonuses; his total income in 1997 was \$524,412, including \$135,102 in salary and \$389,310 in bonuses;

his total income in 1998 was \$531,289, including \$156,289 in salary and \$375,000 in bonuses; his total income in 1999 was \$492,916, including \$145,356 in salary and \$347,500 in bonuses; and his total income in 2000 was \$505,215, including \$145,215 in salary and \$360,000 in bonuses.

I illustrate the wage loss for Mr. Ryan at \$526,352 in year 2000 dollars based on his average real salary and bonuses from 1996 to 2000. The wage loss for Mr. Ryan is grown at the national average wage growth rate of 3.84 percent in 2001; 2.05 percent in 2002; 5.27 percent in 2003; 4.41 percent in 2004; 3.04 percent in 2005; 3.89 percent in 2006; 4.08 percent in 2007; 2.94 percent in 2008; 1.05 percent in 2009; 1.23 percent in 2010; 0.52 percent in 2011; 5.87 percent in 2012; zero percent in 2013; 2.57 percent in 2014; 2.46 percent in 2015; 2.14 percent in 2016; 3.01 percent in 2017; 2.92 percent in 2018; and an estimated national average wage growth rate of 3.0 percent in 2019 and 2020. Future wages are grown at a 1.0 percent real rate.

The Summary Report for Mr. Ryan from KBW indicates that his benefits included an insurance plan covering his family, with an employer contribution for insurance of \$10,090 in 2001. This contribution for insurance is estimated to be 1.85 percent of his 2001 annual wages of \$546,576. KBW was an employee-owned firm, and Mr. Ryan had a profit-sharing retirement plan. The 2000 KBW contribution to Mr. Ryan's profit-sharing retirement plan was \$22,363, which is equal to 4.25 percent of the wage loss in year 2000 dollars based on the 1996 to 2000 average real wages. Legally-required employer Social Security contributions of 6.2 percent up to the maximum wage of \$80,400 in 2001, which is \$4,985, and is equal to 0.91 percent of wages for Mr. Ryan. I have assumed that employee benefits grow at the same rate as wages and are discounted to present value at the same discount rate. Since these tables assume annual work, I do not include employee benefits relating to unemployment, injury, illness or disability; benefits are estimated to total 7.01 percent of wages.

Personal consumption is an offset of the income. I use a personal consumption offset based on a study by Ruble, Patton, and Nelson, "Patton-Nelson Personal Consumption Tables 2011-12," Journal of Legal Economics, Vol. 21, No. 1, 2014, pp. 41-55, based on data from the U.S. Department of Labor, Bureau of Labor Statistics, "Consumer Expenditure Survey, 2011-12," Washington DC, 2012, which shows personal consumption in this case for the maximum earnings threshold to be 6.5 percent of wages for a five-person household from 2001 to 2007; 8.8 percent of wages for a four-person household in 2008 and 2009; and 12.6 percent of wages for a two-person household in 2010 and thereafter.

I assume annual employment each year and show the accumulation through life expectancy. While these tables are calculated

through the end of life expectancy, the losses from working through any age can be read off the table.

Based on the above assumptions, my opinion of the wage loss is \$25,949,830 ▶ Table 9; this figure assumes work to age 79.3, but the ability to work through any assumed age may be read from Table 9; for example, the loss to age 67 is \$16,159,990.

II. LOSS OF HOUSEHOLD/FAMILY HOUSEKEEPING AND HOUSEHOLD MANAGEMENT SERVICES

Tables 10 through 12 show the pecuniary loss of tangible housekeeping chores and household management services. The number of hours of housekeeping and household management services for married, working males is 13.01 hours per week from 2001 through 2009 when Mr. Ryan's youngest children are assumed to be in the household, and 13.85 hours per week from 2010 through 2023 when no children are assumed to be in the household. The number of hours of housekeeping and household management services for married, retired males is 20.54 hours per week from 2024 and thereafter. This data is based on the American Time Use Survey published by the Bureau of Labor Statistics, www.bls.gov/tus, usefully summarized in a publication by Expectancy Data, The Dollar Value of A Day: 2017 Dollar Valuation, Shawnee Mission, KS, 2018.

The hourly value of the housekeeping and household management services is based on the mean hourly earnings of carpenters; maintenance and repair workers; painters, construction and maintenance; childcare workers; waiters and waitresses; cooks, private household; laundry and dry-cleaning workers; maids and housekeeping cleaners; landscaping and groundskeeping workers; bookkeeping, accounting and auditing clerks; and taxi drivers and chauffeurs, which is \$16.54 per hour in year 2018 dollars. This wage data is based on information from the U.S. Bureau of Labor Statistics, Occupational Employment Statistics, May 2018 National Occupational Employment and Wage Statistics found at www.bls.gov/oes. This figure is corroborated by the average hourly values published by Expectancy Data, The Dollar Value of A Day: 2018 Dollar Valuation, Shawnee Mission, KS, 2019, which is also based on the BLS Occupational Employment Statistics.

I assess such services at their estimated market value which includes a conservative estimate of 50 percent hourly non-wage component reasonably charged by agencies or free-lance individuals who supply such services on a part-time basis, and who are responsible for advertising, hiring and vetting, training, insuring and bonding the part-time service provider, and who are also responsible for pay-related costs such as social security contributions, etc. If a person were to hire a free-lance employee directly instead of going through an agency, then

he or she would have to take on the responsibility for all the non-wage costs that the agency would otherwise incur and then charge for. The money the person would pay directly in wages would be only a portion of the total costs. The total costs would include those items discussed above that the agency would otherwise incur.

Adding the non-wage component to the hourly wage is consistent with labor market theory and competitive market behavior. Peer-reviewed economic research supports this theory and shows that the non-wage costs can average up to 300 percent for the wage. See, for example, Cushing, Matthew J. and David I. Rosenbaum, "Valuing Household Services: A New Look at the Replacement Cost Approach," Journal of Legal Economics, Vol 19, No. 1, 2012, pp. 37-60, wherein the authors found that non-wage costs exceed wage costs by 167 percent. This is more than triple the 50 percent non-wage costs amount I use, discussed above. Also see Smith, David A., Stan V. Smith, and Stephanie R. Uhl, "Estimating the Value of Family Household Management Services: Approaches and Markups," Forensic Rehabilitation & Economics, Vol 3, No. 2, 2010, pp. 85-94. According to this research, the statistical probability is 99 percent that the non-wage costs exceed 250 percent of the wage cost. The use of only a 50 percent non-wage cost makes my estimate very conservative, and it far more than compensates for two possible variations: variations in the national wage depending on locality, and variations in different types of services actually performed in the household. Thus even if one or more of the different types of services are not performed, and even if the services are provided in low wage areas, my use of the low, 50 percent non-wage costs more than compensates for these factors.

According to Merry Maids, a national home cleaning service agency, the charges for their services within the largest 100 Metropolitan Statistical Areas with populations of 500,000 and up range from \$40 to \$65 per hour, averaging \$49 per hour, in 2012. This hourly rate reflects non-wage costs of 250 percent of wages, and after adjusting for market factors, is four times the non-wage costs figure that I use, resulting in an hourly rate of more than double the rate that I use. Thus my use of only a 50 percent addition for non-wage costs is, in fact, very conservative. The hourly value of these services grows at the same rate as the wage growth rate discussed above.

Based on these assumptions, and John Ryan's life expectancy of 79.3 years, my opinion of the loss of the value of housekeeping and household management services is \$659,398 ► Table 12.

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III. LOSS OF VALUE OF LIFE

Tables 13 through 15 show the loss of the value of life. Economists have long agreed that life is valued at more than the lost earnings capacity. My estimate of the value of life is based on many economic studies on what we, as a contemporary society, actually pay to preserve the ability to lead a normal life. The studies examine incremental pay for risky occupations as well as a multitude of data regarding expenditure for life savings by individuals, industry, and state and federal agencies. Based on the average value of a statistical life and life expectancy of 79.3 years, my opinion of the loss of the value of life for John Ryan is \$4,307,325 ▶ Table 15.

My estimate of the value of life is consistent with estimates published in other studies that examine and review the broad spectrum of economic literature on the value of life. Among these is "The Plausible Range for the Value of Life," Journal of Forensic Economics, Vol. 3, No. 3, Fall 1990, pp. 17-39, by T. R. Miller. This study reviews 67 different estimates of the value of life published by economists in peer-reviewed academic journals. The Miller results, in most instances, show the value of life to range from approximately \$1.6 million to \$2.9 million dollars in year 1988 after-tax dollars, with a mean of approximately \$2.2 million dollars. In "The Value of Life: Estimates with Risks by Occupation and Industry," Economic Inquiry, Vol. 42, No. 1, May 2003, pp. 29-48, Professor W. K. Viscusi estimates the value of life to be approximately \$4.7 million dollars in year 2000 dollars. An early seminal paper on the value of life was written by Richard Thaler and Sherwin Rosen, "The Value of Saving a Life: Evidence from the Labor Market." in N.E. Terlickyj (ed.), Household Production and Consumption. New York: Columbia University Press, 1975, pp. 265-300. The Meta-Analyses Appendix to this report reviews additional literature suggesting a value of life of approximately \$5.4 million in year 2008 dollars.

Because it is generally accepted by economists, the economic methodology for the valuation of life has been found to meet the Daubert and Frye standards by many courts, along with the Rules of Evidence in many states nationwide. My testimony on the value of life has been accepted in approximately 225 state and federal cases nationwide in approximately two-thirds of the states and two-thirds of the federal jurisdictions. Testimony has been accepted by U.S. district and appellate courts as well as in state circuit, appellate, and supreme courts. Proof of general acceptance and other standards is found in a discussion of the extensive references to the scientific economic peer-reviewed literature on the value of life listed in the **Value of Life Appendix** to this report.

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The underlying, academic, peer-reviewed studies fall into two general groups: (1) consumer behavior and purchases of safety devices; (2) wage risk premiums to workers; in addition, there is a third group of studies consisting of cost-benefit analyses of regulations. For example, one consumer safety study analyzes the costs of smoke detectors and the lifesaving reduction associated with them. One wage premium study examines the differential rates of pay for dangerous occupations with a risk of death on the job. Just as workers receive shift premiums for undesirable work hours, workers also receive a higher rate of pay to accept a increased risk of death on the job. A study of government regulation examines the lifesaving resulting from the installation of smoke stack scrubbers at high-sulphur, coal-burning power plants. As a hypothetical example of the methodology, assume that a safety device such as a carbon monoxide detector costs \$46 and results in lowering a person's risk of premature death by one chance in 100,000. The cost per life saved is obtained by dividing \$46 by the one in 100,000 probability, yielding \$4,600,000. Overall, based on the peer-reviewed economic literature, I estimate the central tendency of the range of the economic studies to be approximately \$4.9 million in year 2019 dollars.

Other factors may be weighed to determine if these estimated losses for John Ryan should be adjusted because of special qualities or circumstances that economists do not as yet have a methodology for analysis.

In each set of tables, the estimated losses are calculated from September 11, 2001 through an assumed trial or resolution date of January 1, 2020, and from that date thereafter. The last table in each set accumulates the past and future estimated losses. These estimates are provided as a tool, an aid, and a guide to assist the evaluation by others.

All opinions expressed in this report are clearly labeled as such. They are rendered in accordance with generally accepted standards within the field of economics and are expressed to a reasonable degree of economic certainty. Estimates, assumptions, illustrations and the use of benchmarks, which are not opinions, but which can be viewed as hypothetical in nature, are also clearly disclosed and identified herein.

In my opinion, it is reasonable for experts in the field of economics and finance to rely on the materials and information I reviewed in this case for the formulation of my substantive opinions herein.

If additional information is provided to me, which could alter my opinions, I may incorporate any such information into an update, revision, addendum, or supplement of the opinions expressed in this report.

If you have any questions, please do not hesitate to call me.

Sincerely,

A handwritten signature in blue ink that reads "Stan V. Smith". The signature is written in a cursive, slightly slanted style.

Stan V. Smith, Ph.D.
President

APPENDIX: HOUSEHOLD SERVICES VALUATION

Courts have long recognized claims for the value of tangible household family services as an element of damages in personal injury and wrongful death cases, as an aspect of the pecuniary loss in such cases. These services are those that are provided by the injured family member to himself or herself and to other family members, without charge or cost. Other family members who may receive such services can include spouses, children, parents or siblings; such family members do not necessarily have to reside in the same household to receive such services.

Economists and courts have also long recognized that an appropriate method in valuing such tangible services is to value their estimated market-based costs by examining costs paid in labor markets that provide generally comparable services for. Thus, economists can value the service by looking at market equivalents from which a pecuniary standard can be established. This approach is set forth in the 1913 U.S. Supreme Court Decision, Michigan Central Railroad Company v. Vreeland, 227 U.S. 59 (1913). So this method is a century old.

The Supreme Court's suggesting in valuing compensable services in the Vreeland decision is a standard that is not rigid, but actually rather general: "[The] pecuniary loss or damage must be one which can be measured by some standard.... Compensation for such loss manifestly does not include damages by way of recompense for grief or wounded feelings." Michigan Central v. Vreeland.

Examples of lost household services that used to be performed by persons (whether fatally or non-fatally injured) can include physical chores such as mowing the lawn, painting the house, cleaning the windows, doing the laundry, washing and repairing the car, preparing the meals and doing the dishes, among others. For many decades economists have met the Supreme Court's general standard by using labor market equivalents for cooks, laundry workers, gardeners, maids, etc. in valuing the physical chores regarding housekeeping services.

Additionally, economists have recognized that tangible services to family members include services well beyond the physical housekeeping chores. For example, William G. Jungbauer and Mark J. Odegard, in Maximizing Recovery in FELA Wrongful Death Actions, in Assessing Family Loss in Wrongful Death Litigation: The Special Roles of Lost Services and Personal Consumption, Lawyers & Judges Publishing Co., 1999, pp. 284, indicate that a complete analysis of all services performed by family members includes much, much more than the physical housekeeping chores. Frank D. Tinari, in a peer-reviewed, scientific, economic journal article "Household Services: Toward a More Comprehensive Measure," Journal of Forensic Economics, Vol. 11, No. 3, Fall

1998, pp. 253-265, expresses the same view. Dr. Tinari has been a tenured Professor at Seton Hall University, and is a former president of the National Association of Forensic Economics. There has been no peer-reviewed critique of this article since it appeared.

Jungbauer and Odegard indicate that a person may have provided services of many other professions such as that of a chauffeur, driving other family members to appointments, or that of a security guard, especially regarding the injury to a male spouse, etc. Every family member acts as a companion to other family members. And it is common for family members to act as counselors for one another, typically providing advice and counsel on important personal, family, medical, financial, career or other issues. The marketplace can and does value such items of loss. If the person cannot provide these services, or does so at a reduced capacity or rate, there is a distinct and definite loss to the other family members. These losses have a definite and easily measurable pecuniary value. Vreeland requires only that a "reasonable expectation" of loss of services be proven and that such loss be valued by some standard, presumably a reasonably-based economic standard, to allow recovery.

The economic literature on recovery of loss of services discusses an estimated market-oriented valuation cost method to assess the pecuniary value of the loss of accompaniment services, as well as the value of advice, guidance and counsel services that family members provide to one another, within a broadly defined scope of family services. See, for example, Frank D. Tinari, "Household Services: Toward a More Comprehensive Measure, " Journal of Forensic Economics, Vol. 11, No. 3, Fall 1998, pp. 253-265.

Finally, according to Chief Justice Robert Wilentz of the Supreme Court of New Jersey, in Green v. Bittner, 85 NJ 1, 1980, pp. 12, accompaniment services, to be compensable, must be that which would have provided services substantially equivalent to those provided by the companions often hired today by the aged or infirm, or substantially equivalent to services provided by nurses or practical nurses; and its value must be confined to what the marketplace would pay a stranger with similar qualifications for performing such services.

In valuing the household services that are provided by family members to one another, beyond the physical housekeeping chores, both the U.S Supreme Court and the New Jersey Supreme Court discuss looking at labor markets for the equivalent value of such services. This methodology is identical to the traditional approach that economists have been using for over four decades in valuing the physical chores involved in housekeeping services.

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APPENDIX: VALUE OF LIFE

The economic methodology for the valuation of life has been found to meet the Daubert and Frye standards by many courts, along with the Rules of Evidence in many states nationwide. My testimony on the value of life has been accepted in approximately 225 state and federal cases nationwide in approximately two-thirds of the states and two-thirds of the federal jurisdictions. Testimony has been accepted by U.S. district and appellate courts as well as in state circuit, appellate, and supreme courts. The Daubert standard sets forth four criteria:

1. Testing of the theory and science
2. Peer Review
3. Known or potential rate of error
4. Generally accepted.

Testing of the theory and science has been accomplished over the past four decades, since the 1960s. Dozens of economists of high renown have published over a hundred articles in high quality, peer-reviewed economic journals measuring the value of life. The value of life theories are perhaps among the most well-tested in the field of economics, as evidenced by the enormous body of economic scientific literature that has been published in the field and is discussed below.

Peer Review of the concepts and methodology have been extraordinarily extensive. One excellent review of this extensive, peer-reviewed literature can be found in "The Value of Risks to Life and Health," W. K. Viscusi, Journal of Economic Literature, Vol. 31, December 1993, pp. 1912-1946. A second is "The Value of a Statistical Life: A Critical Review of Market Estimates throughout the World." W. K. Viscusi and J. E. Aldy, Journal of Risk and Uncertainty, Vol. 27, No. 1, November 2002, pp. 5-76. Additional theoretical and empirical work by Viscusi, a leading researcher in the field, can be found in: "The Value of Life", W. K. Viscusi, John M. Olin Center for Law, Economics, and Business, Harvard Law School, Discussion Paper No. 517, June 2005. An additional peer-reviewed article discusses the application to forensic economics: "The Plausible Range for the Value of Life," T. R. Miller, Journal of Forensic Economics, Vol. 3, No. 3, Fall 1990, pp. 17-39, which discusses the many dozens of articles published in other peer-reviewed economic journals on this topic. This concept is discussed in detail in "Willingness to Pay Comes of Age: Will the System Survive?" T. R. Miller, Northwestern University Law Review, Summer 1989, pp. 876-907, and "Hedonic Damages in Personal Injury and Wrongful Death

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Litigation," by Stan V. Smith in Gaughan and Thornton, eds., Litigation Economics, Contemporary Studies in Economic and Financial Analysis, Vol. 74, pp. 39-59, JAI Press, Greenwich, CT, 1993. Kenneth Arrow, a Nobel Laureate in economics, discusses this method for valuing life in "Invaluable Goods," Journal of Economic Literature, Vol. 35, No. 2, 1997, pp. 759. See the Meta-Analyses Appendix for an additional review of the literature.

The known or potential rate of error is well researched. All of these articles discuss the known or potential rate of error, well within the acceptable standard in the field of economics, generally using a 95% confidence rate for the statistical testing and acceptance of results. There are few areas in the field of economics where the known or potential rate of error has been as well-accepted and subject to more extensive investigation.

General Acceptance of the concepts and methodology on the value of life in the field of economics is extensive. This methodology is and has been generally accepted in the field of economics for many years. Indeed, according to the prestigious and highly-regarded research institute, The Rand Corporation, by 1988, the peer-reviewed scientific methods for estimating the value of life were well-accepted: "Most economists would agree that the willingness-to-pay methodology is the most conceptually appropriate criterion for establishing the value of life," Computing Economic loss in Cases of Wrongful Death, King and Smith, Rand Institute for Civil Justice, R-3549-ICJ, 1988.

While first discussed in cutting edge, peer-reviewed economic journals, additional proof of general acceptance is now indicated by the fact that this methodology is now taught in standard economics courses at the undergraduate and graduate level throughout hundreds of colleges and universities nationwide as well as the fact that it is taught and discussed in widely-accepted textbooks in the field of law and economics: Economics, Sixth Edition, David C. Colander, McGraw-Hill Irwin, Boston, 2006, pp. 463-465; this introductory economics textbook is the third most widely used textbook in college courses nationwide. Hamermesh and Rees's The Economics of Work and Pay, Harper-Collins, 1993, Chapter 13, a standard advanced textbook in labor economics, also discusses the methodology for valuing life. Other textbooks discuss this topic as well. Richard Posner, a Judge and former Chief Judge of the U.S. Court of Appeals for the highly regarded 7th Circuit and Senior Lecturer at the University of Chicago Law School, one of most prolific legal writers in America, details the Value of Life approach in his widely used textbooks: Economic Analysis of Law, 1986, Little Brown & Co., pp. 182-185 and Tort Law, 1982, Little Brown & Co., pp. 120-126.

As further evidence of general acceptance in the field, some surveys (albeit non-scientific) published in the field of



forensic economics show that hundreds of economists nationwide are now familiar with this methodology and are available to prepare (and critique) forensic economic value of life estimates. Indeed, some economists who indicate they will prepare such analysis for plaintiffs also are willing to critique such analysis for defendants, as I have done. That an economist is willing to critique a report does not indicate that he or she is opposed to the concept or the methodology, but merely available to assure that the plaintiff economist has employed proper techniques. The fact that there are economists who indicate they do not prepare estimates of value of life is again no indication that they oppose the methodology: many claim they are not familiar with the literature and untrained in this area. While some CPAs and others without a degree in economics have opposed these methods, such professionals do not have the requisite academic training and are unqualified to make such judgements. However, as in any field of economics, this area is not without any dissent. General acceptance does not mean universal acceptance.

Additional evidence of general acceptance in the field is found in the teaching of the concepts regarding the value of life. Forensic Economics is now taught as a special field in a number of institutions nationwide. I taught what is believed to be the first course ever presented in the field of Forensic Economics at DePaul University in Spring, 1990. My own book, Economic/Hedonic Damages, Anderson, 1990, and supplemental updates thereto, co-authored with Dr. Michael Brookshire, a Professor of Economics in West Virginia, has been used as a textbook in at least 5 colleges and universities nationwide in such courses in economics, and has a thorough discussion of the methodology. Toppino et. al., in "Forensic Economics in the Classroom," published in The Earnings Analyst, Journal of the American Rehabilitation Economics Association, Vol. 4, 2001, pp. 53-86, indicate that hedonic damages is one of 15 major topic areas taught in such courses.

Lastly, general acceptance is found by examining publications in the primary journal in the field of Forensic Economics, which is the peer-reviewed Journal of Forensic Economics, where there have been published many articles on the value of life. Some are cited above. Others include: "The Econometric Basis for Estimates of the Value of Life," W. K. Viscusi, Vol 3, No. 3, Fall 1990, pp. 61-70; "Hedonic Damages in the Courtroom Setting." Stan V. Smith, Vol. 3, No. 3, Fall 1990, pp. 41-49; "Issues Affecting the Calculated Value of Life," E. P. Berla, M. L. Brookshire and Stan V. Smith, Vol 3, No. 1, 1990, pp. 1-8; "Hedonic Damages and Personal Injury: A Conceptual Approach." G. R. Albrecht, Vol. 5., No. 2, Spring/Summer 1992, pp. 97-104; "The Application of the Hedonic Damages Concept to Wrongful and Personal Injury Litigation." G. R. Albrecht, Vol. 7, No. 2, Spring/Summer 1994, pp. 143-150; and also "A Review of the Monte Carlo Evidence Concerning Hedonic Value of Life Estimates," R. F.

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Gilbert, Vol. 8, No. 2, Spring/Summer 1995, pp. 125-130. Professor Ike Mathur, while Chairman of the Department of Finance at Southern Illinois University wrote an article on how the value of life studies can be used to provide a basis for estimating the value of life per year in application to litigation. This article corroborates my approach: "Estimating Value of Life per Life Year." I. Mathur, Journal of Forensic Economics, Vol. 3, No. 3, 1990, pp. 95-96. As do many of the authors of applications of the value of life literature to litigation economics, Professor Mathur has frequently testified in court, and courts have admitted his testimony.

It is important to note that this methodology is endorsed and employed by the U. S. Government as the standard and recommended approach for use by all U. S. Agencies in valuing life for policy purposes, as mandated in current and past Presidential Executive Orders in effect since 1972, and as discussed in "Report to Congress on the Costs and Benefits of Federal Regulations," Office of Management and Budget, 1998, and "Economic Analysis of Federal Regulations Under Executive Order 12866," Executive Office of the President, Office of Management and Budget, pp. 1-37, and "Report to the President on Executive Order No. 12866," Regulatory Planning and Review, May 1, 1994, Office of Information and Regulatory Affairs, Office of Management and Budget. Prior presidents signed similar orders as discussed in "Federal Agency Valuations of Human life," Administrative Conference of the United States, Report for Recommendation 88-7, December 1988, pp. 368-408. 926

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APPENDIX: META-ANALYSES AND VALUE OF LIFE RESULTS SINCE 2000

Below I list the principal systematic reviews (meta-analyses), since the year 2000, of the value of life literature, and the values of a statistical life that they recommend. In statistics, a meta-analysis combines the results of several studies that address a set of related research hypotheses. Meta-analysis increase the statistical power of studies by analyzing a group of studies and provide a more powerful and accurate data analysis than would result from analyzing each study alone. Based on those reviews, the Summary Table suggests a best estimate. The following table summarizes the studies and their findings.

These statistically based studies place the value between \$4.4 and \$7.5 million, with \$5.9 million in year 2005 dollars representing a conservative yet credible estimate of the average (and range midpoint) of the values of a statistical life published in the studies in year 2005 dollars. Net of human capital, a credible net value of life based on all these literature reviews to be \$4.8 million in year 2005 dollars, or \$5.4 million in year 2008 dollars.

The actual value that I use, \$4.1 million in year 2008 dollars (\$4.9 million in year 2019 dollars) is approximately 24 percent lower than a conservative average estimate based on the credible meta-analyses. This value was originally based on a review conducted in the late 1980s, averaging the results published by that time. I have increased that late 1980s value only by inflation over time, despite the fact a review of literature over the years since that time has put obvious upward pressure on the figure that I use.

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VALUE OF STATISTICAL LIFE SUMMARY TABLE

Mean and range of value of statistical life estimates (in 2005 dollars) from the best meta-analyses and systematic reviews since 2000 and characteristics of those reviews.

Study	Formal Meta-Analysis?	Number of Values	Best Estimate (2005 Dollars)	Range	Context
Miller 2000	Yes	68 estimates	\$5.1M	\$4.5-\$6.2M	US estimate from all
Mrozek & Taylor 2002	Yes	203 estimates	\$4.4M	+ or - 35%	Labor market
Viscusi & Aldy 2003	Yes	49 estimates	\$6.5M	\$5.1-\$9.6M	Labor market, US estimate from all
Kochi et al. 2006	Yes	234 estimates	\$6.0M	+ or - 44%	Labor market survey
Bellavance 2006 (published in 2009)	Yes	37 estimates	\$7.5M	+ or - 19%	Labor market

Adapted from Ted R. Miller's paper "Hedonic Damages," Journal of Forensic Economics, Vol. 20, No. 2 (October 2008), pp. 137-153.

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Miller (2000) started from the Miller 1989 JFE estimates and used statistical methods to adjust for differences between studies. It also added newer studies, primarily ones outside the United States. The authors specified the most appropriate study approach a priori, which allowed calculation of a best estimate from the statistical regression. Miller, Ted R, "Variations between Countries in Values of Statistical Life", Journal of Transport Economics and Policy, Vol. 34, No. 2 (May 2000), pp. 169-188.

Mrozek and Taylor (2002) searched intensively for studies of the value of life implied by wages paid for risky jobs. They coded all values from each study rather than a most appropriate estimate. A statistical analysis identified what factors accounted for the differences in values between studies. The authors specified the most appropriate study approach a priori, which allowed calculation of a best estimate from the statistical regression. Mrozek, Janusz R. and Laura O. Taylor, "What Determines the Value of Life? A Meta-Analysis", Journal of Policy Analysis and Management, Vol. 21, No. 2 (2002), pp. 253-270.

Viscusi and Aldy (2003) focused on values from labor market studies that they considered of high quality and that provided data on risk levels and other important explanatory variables. They used statistical methods to account for variations between studies and derive a best estimate. W.K. Viscusi and J.E. Aldy, "The Value of a Statistical Life: A Critical Review of Market Estimates Throughout the World", Journal of Risk and Uncertainty, Vol. 27, No. 1 (2003), pp. 5-76.

Kochi et al. (2006) searched intensively for studies of the value of life implied by wages and coded all values from each study rather than a most appropriate estimate. They did not filter study quality carefully. The best estimate was derived by statistical methods based on the distribution of the values within and across studies. Kochi, Ikuho, Bryan Hubbell, and Randall Kramer, "An Empirical Bayes Approach to Combining and Comparing Estimates of the Value of a Statistical Life for Environmental Policy Analysis", Environmental and Resource Economics, Vol. 34 (2006), pp. 385-406.

Bellavance et al. (2009) focused on values from labor market studies that they considered of high quality and that provided data on risk levels and other important explanatory variables. They used statistical methods to account for variations between studies and derive a best estimate. Bellavance, Francois, Georges Dionne, and Martin Lebeau, "The Value of a Statistical Life: A Meta-Analysis with a Mixed Effects Regression Model," Journal of Health Economics, Vol. 28, Issue 2, (2009), pp. 444-464. 3A22



SUMMARY OF LOSSES FOR JOHN RYAN

TABLE	DESCRIPTION	ESTIMATE
*****	*****	*****
	<u>EARNINGS</u>	
	LOSS OF WAGES & BENEFITS, NET OF PERSONAL CONSUMPTION	
9	Annual Employment to age 67	\$16,159,990

	<u>HOUSEHOLD/FAMILY SERVICES</u>	
	LOSS OF HOUSEHOLD/FAMILY HOUSEKEEPING AND HOME MANAGEMENT SERVICES	
12		\$ 659,398

	<u>LOSS OF ENJOYMENT OF LIFE</u>	
15	LOSS OF VALUE OF LIFE	\$ 4,307,325

The information on this Summary of Losses is intended to summarize losses under certain given assumptions. Please refer to the report and the tables for all the opinions.

Table 1

LOSS OF PAST WAGES

2001 - 2019

YEAR	AGE	WAGES	CUMULATE
****	***	*****	*****
2001	45	\$166,219	\$166,219
2002	46	557,778	723,997
2003	47	587,159	1,311,156
2004	48	613,059	1,924,215
2005	49	631,696	2,555,911
2006	50	656,278	3,212,189
2007	51	683,069	3,895,258
2008	52	703,165	4,598,423
2009	53	710,556	5,308,979
2010	54	719,271	6,028,250
2011	55	722,978	6,751,228
2012	56	765,403	7,516,631
2013	57	765,403	8,282,034
2014	58	785,050	9,067,084
2015	59	804,391	9,871,475
2016	60	821,568	10,693,043
2017	61	846,322	11,539,365
2018	62	871,069	12,410,434
2019	63	897,201	\$13,307,635
JOHN RYAN		\$13,307,635	

Table 2

LOSS OF PAST EMPLOYEE BENEFITS

2001 - 2019

YEAR	AGE	EMPLOYEE BENEFITS	CUMULATE
****	***	*****	*****
2001	45	\$11,652	\$11,652
2002	46	39,100	50,752
2003	47	41,160	91,912
2004	48	42,975	134,887
2005	49	44,282	179,169
2006	50	46,005	225,174
2007	51	47,883	273,057
2008	52	49,292	322,349
2009	53	49,810	372,159
2010	54	50,421	422,580
2011	55	50,681	473,261
2012	56	53,655	526,916
2013	57	53,655	580,571
2014	58	55,032	635,603
2015	59	56,388	691,991
2016	60	57,592	749,583
2017	61	59,327	808,910
2018	62	61,062	869,972
2019	63	62,894	\$932,866

JOHN RYAN \$932,866

Table 3

LOSS OF PAST PERSONAL CONSUMPTION
2001 - 2019

YEAR	AGE	PERSONAL CONSUMPTION	CUMULATE
****	***	*****	*****
2001	45	-\$11,569	-\$11,569
2002	46	-38,821	-50,390
2003	47	-40,866	-91,256
2004	48	-42,669	-133,925
2005	49	-43,966	-177,891
2006	50	-45,677	-223,568
2007	51	-47,542	-271,110
2008	52	-66,238	-337,348
2009	53	-66,934	-404,282
2010	54	-96,958	-501,240
2011	55	-97,457	-598,697
2012	56	-103,176	-701,873
2013	57	-103,176	-805,049
2014	58	-105,825	-910,874
2015	59	-108,432	-1,019,306
2016	60	-110,747	-1,130,053
2017	61	-114,084	-1,244,137
2018	62	-117,420	-1,361,557
2019	63	-120,943	-\$1,482,500
JOHN RYAN		-\$1,482,500	

Table 4

ECONOMIC LOSS TO DATE

2001 - 2019

YEAR	AGE	WAGES	EMPLOYEE BENEFITS	PERSONAL CONSUMPTION	TOTAL	CUMULATE
****	***	*****	*****	*****	*****	*****
2001	45	\$166,219	\$11,652	-\$11,569	\$166,302	\$166,302
2002	46	557,778	39,100	-38,821	558,057	724,359
2003	47	587,159	41,160	-40,866	587,453	1,311,812
2004	48	613,059	42,975	-42,669	613,365	1,925,177
2005	49	631,696	44,282	-43,966	632,012	2,557,189
2006	50	656,278	46,005	-45,677	656,606	3,213,795
2007	51	683,069	47,883	-47,542	683,410	3,897,205
2008	52	703,165	49,292	-66,238	686,219	4,583,424
2009	53	710,556	49,810	-66,934	693,432	5,276,856
2010	54	719,271	50,421	-96,958	672,734	5,949,590
2011	55	722,978	50,681	-97,457	676,202	6,625,792
2012	56	765,403	53,655	-103,176	715,882	7,341,674
2013	57	765,403	53,655	-103,176	715,882	8,057,556
2014	58	785,050	55,032	-105,825	734,257	8,791,813
2015	59	804,391	56,388	-108,432	752,347	9,544,160
2016	60	821,568	57,592	-110,747	768,413	10,312,573
2017	61	846,322	59,327	-114,084	791,565	11,104,138
2018	62	871,069	61,062	-117,420	814,711	11,918,849
2019	63	897,201	62,894	-120,943	839,152	\$12,758,001
JOHN RYAN		\$13,307,635	\$932,866	-\$1,482,500	\$12,758,001	

Table 5

PRESENT VALUE OF FUTURE WAGES

2020 - 2035

YEAR	AGE	WAGES	DISCOUNT FACTOR	PRESENT VALUE	CUMULATE
****	***	*****	*****	*****	*****
2020	64	\$924,117	0.98765	\$912,704	\$912,704
2021	65	933,358	0.97546	910,453	1,823,157
2022	66	942,692	0.96342	908,208	2,731,365
2023	67	952,119	0.95152	905,960	3,637,325
2024	68	961,640	0.93978	903,730	4,541,055
2025	69	971,256	0.92817	901,491	5,442,546
2026	70	980,969	0.91672	899,274	6,341,820
2027	71	990,779	0.90540	897,051	7,238,871
2028	72	1,000,687	0.89422	894,834	8,133,705
2029	73	1,010,694	0.88318	892,625	9,026,330
2030	74	1,020,801	0.87228	890,424	9,916,754
2031	75	1,031,009	0.86151	888,225	10,804,979
2032	76	1,041,319	0.85087	886,027	11,691,006
2033	77	1,051,732	0.84037	883,844	12,574,850
2034	78	1,062,249	0.82999	881,656	13,456,506
2035	79	787,752	0.82244	647,879	\$14,104,385
JOHN RYAN				\$14,104,385	

Table 6

PRESENT VALUE OF FUTURE EMPLOYEE BENEFITS
2020 - 2035

YEAR	AGE	EMPLOYEE BENEFITS	DISCOUNT FACTOR	PRESENT VALUE	CUMULATE
****	***	*****	*****	*****	*****
2020	64	\$64,781	0.98765	\$63,981	\$63,981
2021	65	65,428	0.97546	63,822	127,803
2022	66	66,083	0.96342	63,666	191,469
2023	67	66,744	0.95152	63,508	254,977
2024	68	67,411	0.93978	63,352	318,329
2025	69	68,085	0.92817	63,194	381,523
2026	70	68,766	0.91672	63,039	444,562
2027	71	69,454	0.90540	62,884	507,446
2028	72	70,148	0.89422	62,728	570,174
2029	73	70,850	0.88318	62,573	632,747
2030	74	71,558	0.87228	62,419	695,166
2031	75	72,274	0.86151	62,265	757,431
2032	76	72,996	0.85087	62,110	819,541
2033	77	73,726	0.84037	61,957	881,498
2034	78	74,464	0.82999	61,804	943,302
2035	79	55,221	0.82244	45,416	\$988,718
JOHN RYAN				\$988,718	

Table 7

PRESENT VALUE OF FUTURE PERSONAL CONSUMPTION
2020 - 2035

YEAR	AGE	PERSONAL CONSUMPTION	DISCOUNT FACTOR	PRESENT VALUE	CUMULATE
****	***	*****	*****	*****	*****
2020	64	-\$124,571	0.98765	-\$123,033	-\$123,033
2021	65	-125,817	0.97546	-122,729	-245,762
2022	66	-127,075	0.96342	-122,427	-368,189
2023	67	-128,346	0.95152	-122,124	-490,313
2024	68	-129,629	0.93978	-121,823	-612,136
2025	69	-130,925	0.92817	-121,521	-733,657
2026	70	-132,235	0.91672	-121,222	-854,879
2027	71	-133,557	0.90540	-120,923	-975,802
2028	72	-134,893	0.89422	-120,624	-1,096,426
2029	73	-136,242	0.88318	-120,326	-1,216,752
2030	74	-137,604	0.87228	-120,029	-1,336,781
2031	75	-138,980	0.86151	-119,733	-1,456,514
2032	76	-140,370	0.85087	-119,437	-1,575,951
2033	77	-141,773	0.84037	-119,142	-1,695,093
2034	78	-143,191	0.82999	-118,847	-1,813,940
2035	79	-106,189	0.82244	-87,334	-\$1,901,274
JOHN RYAN				-\$1,901,274	

Table 8

PRESENT VALUE OF FUTURE WAGE AND BENEFIT LOSS
2020 - 2035

YEAR	AGE	WAGES	EMPLOYEE BENEFITS	PERSONAL CONSUMPTION	TOTAL	CUMULATE
****	***	*****	*****	*****	*****	*****
2020	64	\$912,704	\$63,981	-\$123,033	\$853,652	\$853,652
2021	65	910,453	63,822	-122,729	851,546	1,705,198
2022	66	908,208	63,666	-122,427	849,447	2,554,645
2023	67	905,960	63,508	-122,124	847,344	3,401,989
2024	68	903,730	63,352	-121,823	845,259	4,247,248
2025	69	901,491	63,194	-121,521	843,164	5,090,412
2026	70	899,274	63,039	-121,222	841,091	5,931,503
2027	71	897,051	62,884	-120,923	839,012	6,770,515
2028	72	894,834	62,728	-120,624	836,938	7,607,453
2029	73	892,625	62,573	-120,326	834,872	8,442,325
2030	74	890,424	62,419	-120,029	832,814	9,275,139
2031	75	888,225	62,265	-119,733	830,757	10,105,896
2032	76	886,027	62,110	-119,437	828,700	10,934,596
2033	77	883,844	61,957	-119,142	826,659	11,761,255
2034	78	881,656	61,804	-118,847	824,613	12,585,868
2035	79	647,879	45,416	-87,334	605,961	\$13,191,829
JOHN RYAN		\$14,104,385	\$988,718	-\$1,901,274	\$13,191,829	

Table 9

PRESENT VALUE OF NET WAGE AND BENEFIT LOSS
2001 - 2035

YEAR	AGE	WAGES	EMPLOYEE BENEFITS	PERSONAL CONSUMPTION	TOTAL	CUMULATE
****	***	*****	*****	*****	*****	*****
2001	45	\$166,219	\$11,652	-\$11,569	\$166,302	\$166,302
2002	46	557,778	39,100	-38,821	558,057	724,359
2003	47	587,159	41,160	-40,866	587,453	1,311,812
2004	48	613,059	42,975	-42,669	613,365	1,925,177
2005	49	631,696	44,282	-43,966	632,012	2,557,189
2006	50	656,278	46,005	-45,677	656,606	3,213,795
2007	51	683,069	47,883	-47,542	683,410	3,897,205
2008	52	703,165	49,292	-66,238	686,219	4,583,424
2009	53	710,556	49,810	-66,934	693,432	5,276,856
2010	54	719,271	50,421	-96,958	672,734	5,949,590
2011	55	722,978	50,681	-97,457	676,202	6,625,792
2012	56	765,403	53,655	-103,176	715,882	7,341,674
2013	57	765,403	53,655	-103,176	715,882	8,057,556
2014	58	785,050	55,032	-105,825	734,257	8,791,813
2015	59	804,391	56,388	-108,432	752,347	9,544,160
2016	60	821,568	57,592	-110,747	768,413	10,312,573
2017	61	846,322	59,327	-114,084	791,565	11,104,138
2018	62	871,069	61,062	-117,420	814,711	11,918,849
2019	63	897,201	62,894	-120,943	839,152	12,758,001
2020	64	912,704	63,981	-123,033	853,652	13,611,653
2021	65	910,453	63,822	-122,729	851,546	14,463,199
2022	66	908,208	63,666	-122,427	849,447	15,312,646
2023	67	905,960	63,508	-122,124	847,344	16,159,990
2024	68	903,730	63,352	-121,823	845,259	17,005,249
2025	69	901,491	63,194	-121,521	843,164	17,848,413
2026	70	899,274	63,039	-121,222	841,091	18,689,504
2027	71	897,051	62,884	-120,923	839,012	19,528,516
2028	72	894,834	62,728	-120,624	836,938	20,365,454
2029	73	892,625	62,573	-120,326	834,872	21,200,326
2030	74	890,424	62,419	-120,029	832,814	22,033,140
2031	75	888,225	62,265	-119,733	830,757	22,863,897
2032	76	886,027	62,110	-119,437	828,700	23,692,597
2033	77	883,844	61,957	-119,142	826,659	24,519,256
2034	78	881,656	61,804	-118,847	824,613	25,343,869
2035	79	647,879	45,416	-87,334	605,961	\$25,949,830
JOHN RYAN		\$27,412,020	\$1,921,584	-\$3,383,774	\$25,949,830	

LOSS OF PAST HOUSEHOLD SERVICES
2001 - 2019

YEAR	AGE	HOUSEHOLD SERVICES	CUMULATE
****	***	*****	*****
2001	45	\$3,203	\$3,203
2002	46	10,748	13,951
2003	47	11,314	25,265
2004	48	11,813	37,078
2005	49	12,172	49,250
2006	50	12,646	61,896
2007	51	13,162	75,058
2008	52	13,549	88,607
2009	53	13,692	102,299
2010	54	14,754	117,053
2011	55	14,830	131,883
2012	56	15,701	147,584
2013	57	15,701	163,285
2014	58	16,104	179,389
2015	59	16,500	195,889
2016	60	16,853	212,742
2017	61	17,361	230,103
2018	62	17,868	247,971
2019	63	18,404	\$266,375
JOHN RYAN		\$266,375	

PRESENT VALUE OF FUTURE HOUSEHOLD SERVICES
2020 - 2035

YEAR	AGE	HOUSEHOLD SERVICES	DISCOUNT FACTOR	PRESENT VALUE	CUMULATE
****	***	*****	*****	*****	*****
2020	64	\$18,956	0.98765	\$18,722	\$18,722
2021	65	19,146	0.97546	18,676	37,398
2022	66	19,337	0.96342	18,630	56,028
2023	67	19,530	0.95152	18,583	74,611
2024	68	29,254	0.93978	27,492	102,103
2025	69	29,547	0.92817	27,425	129,528
2026	70	29,842	0.91672	27,357	156,885
2027	71	30,140	0.90540	27,289	184,174
2028	72	30,441	0.89422	27,221	211,395
2029	73	30,745	0.88318	27,153	238,548
2030	74	31,052	0.87228	27,086	265,634
2031	75	31,363	0.86151	27,020	292,654
2032	76	31,677	0.85087	26,953	319,607
2033	77	31,994	0.84037	26,887	346,494
2034	78	32,314	0.82999	26,820	373,314
2035	79	23,964	0.82244	19,709	\$393,023
JOHN RYAN				\$393,023	

Table 12

PRESENT VALUE OF NET HOUSEHOLD SERVICE LOSS
2001 - 2035

YEAR	AGE	HOUSEHOLD SERVICES	CUMULATE
****	***	*****	*****
2001	45	\$3,203	\$3,203
2002	46	10,748	13,951
2003	47	11,314	25,265
2004	48	11,813	37,078
2005	49	12,172	49,250
2006	50	12,646	61,896
2007	51	13,162	75,058
2008	52	13,549	88,607
2009	53	13,692	102,299
2010	54	14,754	117,053
2011	55	14,830	131,883
2012	56	15,701	147,584
2013	57	15,701	163,285
2014	58	16,104	179,389
2015	59	16,500	195,889
2016	60	16,853	212,742
2017	61	17,361	230,103
2018	62	17,868	247,971
2019	63	18,404	266,375
2020	64	18,722	285,097
2021	65	18,676	303,773
2022	66	18,630	322,403
2023	67	18,583	340,986
2024	68	27,492	368,478
2025	69	27,425	395,903
2026	70	27,357	423,260
2027	71	27,289	450,549
2028	72	27,221	477,770
2029	73	27,153	504,923
2030	74	27,086	532,009
2031	75	27,020	559,029
2032	76	26,953	585,982
2033	77	26,887	612,869
2034	78	26,820	639,689
2035	79	19,709	\$659,398
JOHN RYAN		\$659,398	

Table 13

LOSS OF PAST RVL TO JOHN RYAN
2001 - 2019

YEAR	AGE	RVL	CUMULATE
*****	***	*****	*****
2001	45	\$29,936	\$29,936
2002	46	100,782	130,718
2003	47	102,677	233,395
2004	48	106,024	339,419
2005	49	109,650	449,069
2006	50	112,436	561,505
2007	51	117,023	678,528
2008	52	117,128	795,656
2009	53	120,314	915,970
2010	54	122,119	1,038,089
2011	55	125,734	1,163,823
2012	56	127,921	1,291,744
2013	57	129,840	1,421,584
2014	58	130,827	1,552,411
2015	59	131,782	1,684,193
2016	60	134,510	1,818,703
2017	61	137,348	1,956,051
2018	62	139,971	2,096,022
2019	63	142,771	\$2,238,793
JOHN RYAN		\$2,238,793	

Table 14

PRESENT VALUE OF FUTURE RVL TO JOHN RYAN
2020 - 2035

YEAR	AGE	RVL	DISCOUNT FACTOR	PRESENT VALUE	CUMULATE
****	***	*****	*****	*****	*****
2020	64	\$145,626	0.98765	\$143,828	\$143,828
2021	65	145,626	0.97546	142,052	285,880
2022	66	145,626	0.96342	140,299	426,179
2023	67	145,626	0.95152	138,566	564,745
2024	68	145,626	0.93978	136,856	701,601
2025	69	145,626	0.92817	135,166	836,767
2026	70	145,626	0.91672	133,498	970,265
2027	71	145,626	0.90540	131,850	1,102,115
2028	72	145,626	0.89422	130,222	1,232,337
2029	73	145,626	0.88318	128,614	1,360,951
2030	74	145,626	0.87228	127,027	1,487,978
2031	75	145,626	0.86151	125,458	1,613,436
2032	76	145,626	0.85087	123,909	1,737,345
2033	77	145,626	0.84037	122,380	1,859,725
2034	78	145,626	0.82999	120,868	1,980,593
2035	79	106,925	0.82244	87,939	\$2,068,532
JOHN RYAN				\$2,068,532	

Table 15

PRESENT VALUE OF NET RVL TO JOHN RYAN
2001 - 2035

YEAR	AGE	RVL	CUMULATE
****	***	*****	*****
2001	45	\$29,936	\$29,936
2002	46	100,782	130,718
2003	47	102,677	233,395
2004	48	106,024	339,419
2005	49	109,650	449,069
2006	50	112,436	561,505
2007	51	117,023	678,528
2008	52	117,128	795,656
2009	53	120,314	915,970
2010	54	122,119	1,038,089
2011	55	125,734	1,163,823
2012	56	127,921	1,291,744
2013	57	129,840	1,421,584
2014	58	130,827	1,552,411
2015	59	131,782	1,684,193
2016	60	134,510	1,818,703
2017	61	137,348	1,956,051
2018	62	139,971	2,096,022
2019	63	142,771	2,238,793
2020	64	143,828	2,382,621
2021	65	142,052	2,524,673
2022	66	140,299	2,664,972
2023	67	138,566	2,803,538
2024	68	136,856	2,940,394
2025	69	135,166	3,075,560
2026	70	133,498	3,209,058
2027	71	131,850	3,340,908
2028	72	130,222	3,471,130
2029	73	128,614	3,599,744
2030	74	127,027	3,726,771
2031	75	125,458	3,852,229
2032	76	123,909	3,976,138
2033	77	122,380	4,098,518
2034	78	120,868	4,219,386
2035	79	87,939	\$4,307,325

JOHN RYAN \$4,307,325

SUMMARY OF LOSSES FOR JOHN RYAN
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<u>LOSS OF WAGES & BENEFITS</u>	<u>PAST LOSS</u>	<u>FUTURE LOSS</u>	<u>NET LOSS</u>
Full-Time Employment to age 67	\$12,757,950	\$3,435,685	\$16,193,634
 <u>LOSS OF HOUSEKEEPING AND HOME MANAGEMENT SERVICES</u>	 \$266,374	 \$393,094	 \$659,467
 <u>LOSS OF VALUE OF LIFE</u>	 \$2,238,794	 \$2,068,849	 \$4,307,643
 TOTAL:	 \$15,263,117	 \$5,897,627	 \$21,160,744

ASSUMPTIONS USED FOR ANALYSIS**First Name:** John**Sex:** M**Last Name:** Ryan**Marital Status:** M**Date of Birth:** 6/9/1956**Children Under 22:** Y

Age on September 11, 2001: 45.3
 Remaining Life Expectancy on
 September 11, 2001: 34.0
 Total Life Expectancy: 79.3

Laura Ryan Age 16
 Kristen Ryan Age 14
 Colin Ryan Age 14

Age on January 1, 2020 63.6
 Remaining Life Expectancy on
 January 1, 2020 15.7
 Age 67 Year: 2023

Wage Loss Assumptions**Occupation:** Senior Vice President, Trading**Employer:** Keefe, Bruyette, and Woods**Wage Assumption Description:**

Mr. Ryan began working at Keefe, Bruyette, and Woods (KBW) in July of 1991. By September 2001 he was a Senior VP for trading with KBW. Mr. Ryan held a MBA degree from Iona University and a Bachelor's degree from Holy Cross. Records from KBW indicate that as of 2001 his base salary was \$5,769.24 bi-weekly, or \$150,000 annually. Mr. Ryan also received bonuses in his employment with KBW. His 1996 total income was \$444,084, including \$165,519 in wages and \$278,565 in bonus; 1997 total income was \$524,412, including \$135,102 in wages and \$389,310 in bonus; 1998 total income was \$531,289, including \$156,289 in wages and \$375,000 in bonus; 1999 total income was \$492,916, including \$145,356 in wages and \$347,500 bonus; and 2000 total income was \$505,215, including \$145,215 in wages and \$360,000 bonus. I illustrate Mr. Ryan's wage loss at \$526,352 in year 2000 dollars based on his average real wages from 1996 to 2000.

Mr. Ryan's benefits at KBW included insurance with an employer contribution of \$10,090 in 2001, which is equal to 1.85% of his estimated 2001 wages. The 2000 KBW contribution to Mr. Ryan's profit-sharing retirement plan was \$22,363, which is equal to 4.25% of his wage loss in year 2000 dollars. Legally-required employer Social Security contributions of the maximum of \$4,985 in 2001 is equal to 0.91% of wages. Fringe benefits for Mr. Ryan total 7.01% of wages.

2001 Wage Base: \$526,352 In Year 2000 Dollars
Fringe Benefits: 7.01% Of Wages

Personal Consumption Rate: Varies 6.5% for 5-Person; 8.8% for 4-Person; & 12.6% for 2-Person

Based on 2019 Wages of : \$897,201

Household Service Hours

Hours While Working: 13.01 Hours Per Week, 2001 to 2009
 13.85 Hours Per Week, No Children
 Hours Upon Retirement: 20.54 Hours Per Week

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*Stan V. Smith, Ph.D.
President*

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Smith Economics Group, Ltd. -- Consultants and Experts in Economics and Finance. President, 11/85 to present. Assisted in the successful resolution of thousands of lawsuits on behalf of clients that include many dozens of the nation's largest law firms, the U.S. Department of Justice, as well as thousands of other prominent plaintiff and defense law firms in almost every state. Firm provides economic and financial consulting and economic legal analysis in federal and state courts on damages of every sort: Business Damages including antitrust damages, patent valuation, breach of contract losses, and others commercial losses; Business Valuations; Personal Injury and Wrongful Death losses including lost wages, benefits, services, and other injury losses; Hedonic Damages; Wrongful Discharge, defamation and employment discrimination; Identity Theft and other credit damages; Product Liability; Pension Fund Evaluation and Withdrawal liability, Security Losses.

DePaul University. -- Adjunct Professor, College of Law, 1990 to 1994. Created and taught a full three-credit course in Advanced Remedies - Analysis of Economic Damages in Litigation, based on my textbook on Forensic Economics; delivered lectures to other courses in subsequent years. This was the first course created nationwide in the area of Forensic Economics.

Ibbotson Associates, Inc. -- Economic and Financial Consultants. Principal and Managing Director; Originator of SBBI Subscription Services, 11/81 to 11/85. Firm provides consulting to hundreds of the nation's most prominent money managers, law firms, brokerage firms, and pension funds.

Seaquest International, Inc. -- Founder and President, 7/77 to 11/81. Developed and financed sophisticated research, search, and recovery technologies for ancient underwater artifacts.

The December Group, Ltd. -- Investment Banking Consultants. Associate Economic Analyst 12/74 to 7/77. Firm specialized in mergers and acquisitions, leveraged buy-outs, divestitures and financing specialized start-ups with venture capital.

JPMorgan Chase Bank - Chicago. -- Staff Economist, 3/74 to 12/74. Analyzed bank credit and service pricing policies.

Federal Reserve System. -- Staff Economist at Board of Governors, Washington, D.C. 9/73 to 2/74.

University of Chicago. - Adjunct Professor, Public Policy Economics, 3/73 to 6/73. Research Assistant in Economics, 3/70 to 6/73.

Midlothian Manufacturing Co. -- Vice President, 9/68 to 3/73. Responsible for marketing to retail and industrial clients; production control.

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EDUCATIONAL BACKGROUND:

University of Chicago, Chicago IL. Ph.D. in Economics, 1997; Support Areas in Finance and Econometrics. Honors: Allied Chemical Scholar and Federal Reserve Internship. The University of Chicago is recognized as a world preeminent institution for the study of Economics and the home of the Law and Economics movement. Prof. Gary Becker, Nobel 1992, Thesis Advisor; Research Assistant to Prof. Eugene Fama, Nobel 2013.

University of Chicago, Chicago, IL. Master's Degree, 1972, Graduate School of Business; Field of Concentration in Economics.

Cornell University, Ithaca, NY. Bachelor of Science, Operations Research, 1968; Field of Concentration in Statistics, Computer Science and Industrial Engineering, Honors: John McMullen Scholar.

PROFESSIONAL ACTIVITIES:

American Academy of Economic & Financial Experts, Journal of Legal Economics, Manuscript Referee, 199x-2008.

American Arbitration Association, Arbitrator, 1994 to 1996;

American Board of Disability Analysts, Professional Advisory Council, 2002 to present, Member & Diplomat, 2001 to present;

American College of Forensic Examiners, Fellow, Diplomate and Board Certified Forensic Examiner, 1996 to present;

American Economic Association, Member, 1985 to present;

American Finance Association, Member, 1985 to present;

Collegium of Pecuniary Damages Experts, Charter Member, 2008-2011;

Journal of the American Rehabilitation Economics Association: The Earnings Analyst, Manuscript Referee, 1998 to 2002;

Journal of Forensic Economics, Board of Editors, 1990 to 2001;

Journal of Forensic Economics, Manuscript Referee, 1990 to 2003;

National Academy of Economic Arbitrators, Founder and Charter Member, 1989 to 2005;

National Association of Forensic Economics, Vice President, 2000 to 2003, Board of Editors, 1990 to 2000, Member, 1988 to present;

National Futures Association's Panel of Arbitrators, Arbitrator, 1994 to present;

PUBLICATIONS:

Author, "Historical Returns on Investment Instruments," Handbook of Modern Finance 1985, with Roger Ibbotson and Larry Siegel; Dennis Logue, ed., Warren, Gorham & Lamont, New York.

Author, 1988 Supp.to Vol 13, Am Jur Proof of Facts 2d on Hedonic Damages.

Author, "Economist Proposes Relief From Present Value Ruling," Chicago Daily Law Bulletin, June 8, 1988.

Author, "Hedonic Damages" Illinois Tort Report, June, 1988.

Author, "Hedonic Damages in Wrongful Death Cases," the ABA Journal, Sept, 1988. 7B8

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- Author, "Hedonic Damages," The Audio Lawyer, Vol. 6 No. 8, ALI-ABA, February, 1989. 1197
- Author, "The Hedonic Value of Life: Economic Expert Witness Testimony in Injury and Wrongful Death," Expert Evidence Reporter, Vol. 1, No. 1, September 1989, Shepard's McGraw-Hill.
- Co-author: Economic/Hedonic Damages: A Practice Book for Plaintiff and Defense Attorneys, with M. L. Brookshire, Anderson Publishing Co., Cinn., Ohio, 1990.
- Co-author, "Hedonic Damages and Personal Injury: A Conceptual Approach," Journal of Forensic Economics, 3(1), 1990, pp. 1-8.
- Author, "Hedonic Damages in the Courtroom Setting - A Bridge Over Troubled Waters," Journal of Forensic Economics, 3(3), 1990, pp. 41-49.
- Author, "Admissibility of Hedonic Damages Testimony," The Audio Litigator, Vol. 1, No. 1, April, 1990, ALI-ABA.
- Author, "Hedonic Damages," with G. Magnarini, Wisconsin Lawyer, Vol. 64, No. 2, February 1991.
- Author, "Hedonic Damages: Assessing the Loss of Enjoyment of Life," California State Bar Bulletin, Vol. 1, No. 8, June 1991.
- Co-author, "Hedonic Damages and Personal Injury: A Conceptual Approach," Journal of Forensic Economics, 3(1), 1990, pp. 1-8; Reprinted in A Hedonics Primer for Economists and Attorneys, Compiled and Edited by John O. Ward, Lawyers & Judges Publishing Co., Chapter 7, pp. 121-129, 1992.
- Co-author: 1991/1992 Cumulative Supplement to Economic/Hedonic Damages: A Practice Book for Plaintiff and Defense Attorneys, with M. L. Brookshire, Anderson Publishing Co., Cinn., Ohio, 1992.
- Author, "Hedonic Damages in the Courtroom Setting - A Bridge Over Troubled Waters," Journal of Forensic Economics, 3(3), 1990, pp. 41-49; Reprinted in A Hedonics Primer for Economists and Attorneys, Compiled and Edited by John O. Ward, Lawyers & Judges Publishing Co., Chapter 6, pp. 111-120, 1992.
- Author, "Spotting Bias in Plaintiffs' Economic Loss Reports: A Primer for both Sides," Illinois Bar Journal, Vol 80, No. 12, December, 1992, pp. 635-638.
- Author, "Life Values: Measuring the Loss of Enjoyment of Life - Economic Analysis whose time has come," The Brief, Summer 1993, Vol. 22, No. 4 pp. 24-27, 62-63, The American Bar Association.
- Co-author: 1992/1993 Cumulative Supplement to Economic/Hedonic Damages: A Practice Book for Plaintiff and Defense Attorneys, with M. L. Brookshire and Charles W. de Seve, Anderson Publishing Co., Cinn., Ohio, 1993.
- Author, "Evaluating the Loss of Enjoyment of Life - Hedonic Damages," in Charles N. Simkins, ed., Analysis, Understanding and Presentation of Cases Involving Traumatic Brain Injury, National Head Injury Foundation, Wash., DC, 1993.
- Author, "Hedonic Damages in Personal Injury and Wrongful Death Litigation," in Gaughan and Thornton, eds. Litigation Economics, Contemporary Studies in Economic and Financial Analysis, Vol 74, JAI Press, Greenwich, CT, 1993.
- Author, "Economic Evaluation of the Loss of Enjoyment of Life - Hedonic Damages," in Damages in Tort Actions, Ch. 124, Release 29 - February 1994, Pub. 309, Mathew Bender & Co., New York.
- Author, "Measuring the Loss of Enjoyment of Life in Personal Injury Cases - Hedonic Damages," Journal of the Massachusetts Academy of Trial Attorneys, Vol 2, No. 1, July, 1994, pp. 65-67.
- Author, 3-Part Series, "Two Plus Two Equals -- What?" October, 1994, p. 21; "Detecting Bias in Economics," November, 1994, pp. 14 & 21; "Striving for Economic Fairness," December, 1994, pp. 24-25, California Bar Journal, The Experts.

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- Author, "Measuring the Loss of Enjoyment of Life in Personal Injury Cases - Hedonic Damages," MTLA News, Vol. 6, No. 4, December, 1994, pp. 3-5, Maine Trial Lawyers Association.
- Author, "Hedonic Damages: Measuring The Loss of Enjoyment of Life in Personal Injury Cases," The Prairie Barrister, Vol. 1, No. 1, Winter, 1995, pp. 3, 4, & 12, Nebraska Association of Trial Attorneys.
- Author, "Measuring The Loss of Enjoyment of life in Personal Injury Cases in Ohio - Hedonic Damages," Ohio Trial, Vol. 6, Issue 3, Summer 1995, pp. 13- 16, Ohio Academy of Trial Lawyers Education Foundation.
- Author, "Measuring The Loss of Enjoyment of Life in Personal Injury Cases - Hedonic Damages," The Advocate, Vol. 22, No. 5, September/October, 1995, pp. 14-16, 22, The Kentucky Academy of Trial Attorneys.
- Author, "Damages for the Value of Life," North Dakota Trial Lawyers The Pleader, Vol. 18, No. 4, September 1995, pp. 9-11, 24.
- Author, "Hedonic Damages - Measuring The Loss of Enjoyment of Life in Personal Injury Cases," Law Reporter, The Journal of the Hawaii Trial lawyers Association, Vol. 7, No. 9, September 1995, pp. 8-10.
- Author, "Measuring The Loss of Enjoyment of Life in Personal Injury Cases in Arizona - Hedonic Damages," Advocate, Arizona Trial Lawyers Association, November 1995, pp. 5, 7, 15.
- Co-author, "Hedonic Damages and Personal Injury: A Conceptual Approach," Journal of Forensic Economics, 3(1), 1990, pp. 1-8; Reprinted in A New Hedonics Primer for Economists and Attorneys, Compiled and Edited by Thomas R. Ireland and John O. Ward, Lawyers & Judges Publishing Co., Reading 25, 1996, pp. 325-334.
- Author, "Hedonic Damages - Measuring the Loss of Enjoyment of Life in P.I. Cases," In Brief, Iowa Trial Lawyers Association, Vol. 7/Issue 1, January-February 1996, pp. 13-15.
- Author, "Hedonic Damages in Personal Injury and Wrongful Death Litigation," in Gaughan and Thornton, eds. Litigation Economics, Contemporary Studies in Economic and Financial Analysis, Vol 74, JAI Press, Greenwich, CT, 1993; Reprinted in A New Hedonics Primer for Economists and Attorneys, Compiled and Edited by Thomas R. Ireland and John O. Ward, Lawyers & Judges Publishing Co., Reading 3, 1996, pp. 15-36.
- Author, "Measuring the Loss of Enjoyment of Life in Personal Injury Cases and Wrongful Death Cases in New Mexico - Hedonic Damages," The New Mexico Trial Lawyer, New Mexico Trial Lawyers' Foundation, Vol. XXIV, No. 3, March, 1996, pp. 1, 60-63.
- Author with Introduction by Darrel W. Aherin, "Measuring The Loss of Enjoyment of Life in Personal Injury Cases - Hedonic Damages," Idaho Trial Lawyers Association Journal, Volume 25, Number 2, Summer 1996, pp. 32-36.
- Author, "The Value of Life to Close Family Members: Calculating the Loss of Society and Companionship," The New Hedonics Primer for Economists and Attorneys, Second Edition, Edited by Thomas R. Ireland and John O. Ward, Lawyers & Judges Publishing Co., 1996, pp. 377-384.
- Author, "Pseudo-Economists - The New Junk Scientists," Federation of Insurance & Corporate Counsel Quarterly, Vol. 47, No. 1, Fall 1996, pp. 95-105.
- Author with Introduction by Darrel W. Aherin, "Measuring The Loss of Enjoyment of Life in Personal Injury Cases in Idaho - Hedonic Damages," Western Chronicle, N/D 1996, Western Trial Lawyers Association, pp. 32, 35-36.
- Author, "Measuring The Loss of Enjoyment of Life in Personal Injury Cases in Washington - Hedonic Damages," Trial News, Vol. 32, Number 5, January 1997, Washington State Trial Lawyers Association, pp. 29-30.

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Author, "Jury Verdicts in Drunken Driving Cases," University of Chicago Ph.D. Thesis, UMI Dissertation Services, Ann Arbor, MI, 1997.

Author, "The Value of Life to Close Family Members: Calculating the Loss of Society and Companionship," American Rehabilitation Economics Association 1997 Monograph, pp. 10-16.

Author, Abstract: "Jury Verdicts in Drunken Driving Cases," Journal of Forensic Economics, 11(1), 1998, p. 67-68.

Author, "Why Juries Can Be Trusted," Voir Dire, Vol. 5, Issue 3, Summer 1998, American Board of Trial Advocates, pp. 19-21 & 25.

Author, "Measuring The Loss of Enjoyment of Life in Personal Injury Cases - Hedonic Damages," The Neurolaw Letter, Vol. 9, No. 8, April 2000, pp. 45, 48-49.

Author, "Jury Verdicts and the Dollar Value of Human Life," Journal of Forensic Economics, 13(2), 2000, pp. 169-188.

Author, "Hedonic Damages," Izabela Z. Schultz, Douglas O. Brady, Steven Carella, Eds., Psychological Injuries at Trial, Torts Section, American Bar Association, 2003.

Contributor, "Economic Foundations of Injury and Death Damages," Roger T. Kaufman, James D. Rodgers, Gerald D. Martin, Edward Elgar Publishing, Inc., 2005.

Author, "Don't Overlook the Loss of Expanded Family Services," Trial, Vol. 42, No. 3, "Good Counsel" Column, March 2006, pg. 73.

Co-author, "What is Your Value?" Chapter 2 in Six-Figure Salary Negotiation, Michael Zwell, Platinum Press, 2008.

Co-Author, "Jury Verdicts in Drunken Driving Cases," Review of Law & Economics, Berkeley Press, 2008.

Contributor, "Determining Economic Damages," Gerald D. Martin, James Publishing Inc., 2008 & previous years' editions.

Co-Author, "Estimating the Value of Family Household Management Services: Approaches and Markups," Forensic Rehabilitation & Economics, Vol 3, No. 2, 2010, with David A. Smith and Stephanie R. Uhl, pp. 85-94.

Co-Author, "Credit Damage: Causes, Consequences and Valuation," Forensic Rehabilitation & Economics, Vol 4, No. 1, 2011, with David A. Smith and Stephanie R. Uhl, pp. 27-32.

Co-Author, "Reply to Tinari's Comment on 'Estimating the Value of Family Household Management Services: Approaches and Markups,'" Forensic Rehabilitation & Economics, Vol 4, No. 1, 2011, with David A. Smith and Stephanie R. Uhl, pp. 37-38.

Co-Author, "A Response to Jayne's Comment on 'Estimating the Value of Family Household Management Services: Approaches and Markups,'" Forensic Rehabilitation & Economics, Vol 4, No. 1, 2011, with David A. Smith and Stephanie R. Uhl, pp. 39-40.

Co-Author, "A Reply to Mr. Climo's Credit Damage Comment," Forensic Rehabilitation & Economics, Vol 5, No. 1, 2012, with David A. Smith and Stephanie R. Uhl, pp. 75-76.

Contributor, "Lost Earnings Report: Economist Expert," How To Write An Expert Witness Report, James J. Mangraviti, Jr., Steven Babitsky, Nadine Nasser Donovan, SEAK, Inc, The Expert Witness Training Company, 2014, pp. 527-542.

Author, "Economic Damages in Nevada," Vegas Legal Magazine, Vol 1, Issue 1, Summer 2015, pp. 24-25.

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Originator of Ibbotson Associates' Stocks, Bonds, Bills, and Inflation (SBBI) Yearbook and Companion Services published by Duff & Phelps and available on various Morningstar, Inc. software platforms. SBBI is the authoritative compendium of U. S. financial and investment performance data from 1926 to the present. SBBI is widely relied upon and regarded as the standard reference in courts of law and by the academic, actuarial and investment community. From 1993 to present.

PROFILES:

The Wall Street Journal, page 1 feature article with photo;
The Best Lawyer's in America: Directory of Expert Witnesses;
National Law Journal, page 1 feature article with photo;
Who's Who in the World;
Who's Who in America;
Who's Who in Finance and Industry;
Who's Who in Science and Engineering;
Who's Who in the Midwest;
Who's Who of Emerging Leaders of America;
Chicago Daily Law Bulletin, page 1 feature article;
Chicago Reader, Section 1 feature article with photo;
Like Judgment Day: The Ruin and Redemption of A Town Called Rosewood, D'Orso, Michael, 1996, Pg. 237.

NATIONAL PRESENTATIONS:

Arizona: Brain Injury Association 13th Annual Conference for Attorneys, Phoenix, September 16, 1999;
 California: American Bar Association Annual Meeting, San Francisco, August 10, 1992;
 California: American Trial Lawyers Association 2005 Winter Convention, "Making Tangible the Intangible: Replacement Household/Family Services", Palm Springs, January 29, 2005;
 Canada: Association of Trial Lawyers of America Annual Meeting, Economic Damages, Toronto, 1991;
 District of Columbia: Larry King Live, Washington, May 22, 1989;
 District of Columbia: National Institute for Trial Advocacy (NITA), Seventh Annual Washington DC Masters Advocacy Program, "Direct and Cross Examination of an Economic Witness," Washington, October 15, 1991;
 District of Columbia: National Association. of Protection & Advocacy Systems, Inc., 19th Annual Conference, "Assessment and Proof of Damages," Washington, May 30, 1996;
 District of Columbia: American Bar Association Annual Meeting, Washington, TIPS Aviation and Space Law, "Beyond the Horizon: What's Next in Aviation and Space Law Litigation," October 18, 2013;
 Florida: Association of Trial Lawyers of America 1992 Winter Convention, Boca Raton, "Cutting Edge Developments in Economic Testimony," January 15, 1992;
 Florida: Brain Injury Association 10th Anniversary Trial Lawyers Conference, Palm Beach, September 19, 1996;

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Florida: National Association of Consumer Advocates, 2003 NACA-FCRA Conference, Building on Our Success, Panel of Experts, "What the Experts Have Learned, A View From the Witness Box," Orlando, March 9, 2003;

Georgia: National Academy of Economic Arbitrators Annual Meeting, Differences in Economic Assumptions in Personal Injury Wage Calculations, Atlanta, December, 1989;

Georgia: National Association of Forensic Economics Annual Meeting, Value of Life, Atlanta, December, 1989;

Hawaii: American Bar Association Annual Meeting in Honolulu, HI, Speaker and Expert Witness at Mock Trial, Honolulu, August, 1989;

Idaho: Inner Circle of Advocates Annual Meeting, Sun Valley, August, 1989;

Illinois: University of Chicago 1982 Annual Management Conference on Venture Capital;

Illinois: National Association of Consumer Advocates, 2009 NACA-FCRA Fair Credit Reporting Act Conference, "Credit Damages: How to Estimate Them," Chicago Hyatt Regency, May 9, 2009;

Illinois: American Rehabilitation Economics Association Annual Conference, "Hedonic Damages: A Basic Approach," Chicago, June 13, 2009;

Illinois: National Association of Consumer Advocates, 2010 NACA Auto Fraud Litigation Conference, Credit Damages: How to Estimate Them," Chicago Hyatt Regency, May 16, 2010;

Illinois: SEAK 19th Annual National Expert Witness Conference, "Handling the Toughest Questions: Depositions and Trial," Rosemont, June 25, 2010;

Illinois: National Consumer Law Center 20th Annual Consumer Rights Litigation Conference, "Expert Witnesses at Trial - Handling Experts in the Courtroom," Fairmont Chicago Millennium Park Hotel, November 5, 2011;

Internet: Credit Bureau Strategy Consulting, Webinar Presentation, "The Economics of Credit Damage," September 14, 2009

Louisiana: American Bar Association, National Institute Transportation Megaconference, New Orleans, March 5, 1993;

Louisiana: Defense Research Institute, Medical Malpractice Seminar, New Orleans, May 6, 1994;

Louisiana: Association of Trial Lawyers of America 2001 Winter Convention, Litigation at Sunrise, "Measuring the Loss of Enjoyment of Life in Personal Injury Cases -- Hedonic Damages Over the Last Ten Years," New Orleans, February 12, 2001;

Louisiana: National Association of Consumer Advocates, 2005 NACA-FCRA Conference, "Litigating Accuracy Issues with Furnishers of Credit Data," Speaker on Economic Damages, New Orleans, June 5, 2005;

Louisiana: National Association of Minority and Women-Owned Law Firms, Trials Practice Area Committee Session: Challenging Experts? "Tactics for Mastering Expert Examinations," New Orleans, February 21, 2016;

Louisiana: National Association of Minority and Women-Owned Law Firms, Emerging Leaders Session: Ready for Action? "Hone Your Expert Cross Examination Techniques," New Orleans, February 22, 2016;

Michigan: Northwest #255 Air Disaster Steering Committee Meeting, Detroit, June, 1989;

Nevada: American Rehabilitation Economics Association Conference, Mock Trial Presided by Nevada Supreme Court Justice William Maupin, Reno, May 15, 1999;

Nevada: National Association of Consumer Advocates, 2006 NACA-FCRA Conference, "Experts on Damages," Washington, May 6, 2006;

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Nevada: National Association of Consumer Advocates, 2006 NACA-FCRA Conference, "Breakfast with the Stars," Washington, May 7, 2006;

Nevada: Brain Injury Association of America; Mastering the Science and Trial Strategies, "Making Tangible the Intangible: Expanding the Traditional Measures," Las Vegas, April 4, 2008;

Nevada: Internet Law Leadership Summit at Aria Resort & Casino, "Calculating Complex Financial Damages," Las Vegas, November 30, 2012;

New York: Eastern Economic Association Annual Conference, "Estimating the Value of Family Household Management Services: Approaches and Markups," New York City, February 28, 2009;

New York: Eastern Economic Association Annual Conference, "Credit Damage: Causes, Consequences and Valuation," New York City, February 28, 2009;

Oregon: National Crime Victim Law Institute at Lewis & Clark Law School, Ninth Annual Crime Victim Law Conference, Due Process for Victims: Meaningful Rights in Every Case, Portland, June 11, 2010;

Pennsylvania: Swiss Re American Annual Claims Conference, "Looking to the Third Millennium," Hershey, June 3, 1996;

Texas: MADD Advanced Victim Assistance Institute Seminar, Dallas, November 12, 1994;

Texas: National Norplant Litigation Conference 1995, Houston, June 22, 1995.

REGIONAL PRESENTATIONS:

Hawaii: Western Trial Lawyers Association 1994 Annual Convention, "Making it Work-Trial Practice in the 90's," Maui, June 16, 1994;

Illinois: GSA Seminar "Selling your Business", Chicago, October, 1987;

Illinois: Society of Trial Lawyers, "How to Depose an Economist," Chicago, May 7, 2009;

Louisiana: Southern Trial Lawyers Association Annual Meeting, New Orleans, 1988;

Louisiana: Southern Trial Lawyers Association 1996 Mardi Gras Conference, ATLA Traumatic Brain Injury Litigation Group, "Economic Implication of a Closed Head Injury," New Orleans, February 18, 1996;

Michigan: Advocacy Institute, Continuing Legal Education, 46th Annual Seminar, "Wrongful Death of an Older Person," Ann Arbor, May 12, 1995;

Michigan: Lorman Education Services, "Direct Examination of Experts in a Traumatic Brain Injury Case," Novi, August 21, 1997;

Michigan: Lorman Education Services, "Direct Examination of Experts in a Traumatic Brain Injury Case," Livonia, August 26, 1998;

New York: Eastern Finance Association Special Session on Pension Fund Asset Reversions, 1985;

New York: American Reinsurance Company for Senior Claims Executives Annual Meeting, August, 1989;

Ohio: Anderson Publishing Co., Proof of Economic Damages Seminar, Cincinnati, November 2, 1990.

STATEWIDE PRESENTATIONS:

California: Arizona State Bar Fourth Annual "CLE By The Sea," San Diego, July 22-23, 1994;

Connecticut Trial Lawyer Association, "All About Experts," Hartford, November 21, 1992;

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Florida State Bar Association, National Institute of Trial Advocacy (NITA),
Advanced Trial Advocacy Seminar, Speaker and Expert Witness at Mock trial on
Economic Damages, Gainesville, May 14, 1991;
Georgia Brain Injury Association & Institute of Continuing Legal Education in
Georgia, "Hedonic Damages: Proving Loss of Enjoyment of Life in Non-Fatal
Injury Cases," Atlanta, March 29, 2002;
Idaho Trial Lawyers Association Annual Meeting, Twin Falls, February 23, 1996;
Illinois State Bar Association CLE Series, April, 1989;
Illinois: Insurance Group of the Union League Club of Chicago, "Toward A More
Rational Approach to Liability Judgments," Chicago, March 19, 1991;
Indiana State Bar Association Annual Meeting, October, 1989;
Indiana Trial Lawyers Association Annual Meeting, November 30, 1990;
Indiana State Bar Association "Masters in Trial" Spring Meeting, South Bend, April
18, 1997;
Iowa Trial Lawyers Association Annual Meeting, Des Moines, November 5, 1993;
Kentucky Academy of Trial Attorneys Damages Seminar, Louisville, August 18, 1995;
Louisiana Trial Lawyer Association, Baton Rouge, "Winning with Experts" Seminar,
November 10, 1989;
Louisiana Trial Lawyer Association, "Winning With the Masters" Seminar, New
Orleans, November 21, 1995;
Louisiana Trial Lawyer Association, "Winning With the Masters" Seminar, New
Orleans, December 10, 1997;
Massachusetts Trial Lawyers Association, "Learn From the Experts," Boston, October
9, 1992;
Massachusetts Trial Lawyers Association Annual Meeting, Boston, October 29, 1993;
Michigan Trial Lawyers Association Annual Meeting, Wrongful Death Damages, May,
1990;
Michigan Head Injury Alliance Fifth Annual Seminar on Closed Head Injury,
Detroit, March 24, 1994;
Michigan Head Injury Alliance Sixth Annual Seminar on Closed Head Injury,
Detroit, March 23, 1995;
Michigan Head Injury Alliance Seventh Annual Seminar on Closed Head Injury,
Detroit, March 28, 1996;
Michigan Head Injury Alliance Eighth Annual Seminar on Closed Head Injury,
Detroit, March 27, 1997;
Michigan, Institute of Continuing Legal Education, "The Name of the Game is
Damages--Plaintiff and Defense Strategies in Negligence and Employment Cases,"
Troy, July 20, 2000;
Michigan Trial Lawyers Association Winter Seminar, "Hedonic Damages and Other
Special Economic Issues," Gaylord, February 24, 2001;
Michigan Trial Lawyers Association 13th Annual Seminar in the Snow, Litigation
Strategies and Techniques, "Loss of Society and Household Companionship and
Advisory Services," Bellaire, February 22, 2003;
Mississippi Trial Lawyers Association Annual Convention, "Shooting Stars Seminar,"
Biloxi, May 19, 1995;
Mississippi Trial Lawyers Association Annual Convention, "Taking Your Recovery to
the Next Level: Hedonic Damages," Biloxi, May 10, 2001;
Mississippi: Arkansas Trial Lawyer Association "Maximizing Damages in the Personal
Injury Case," Tunica, MS, October 24, 2003;
Missouri: Kansas Trial Lawyers Association Annual Meeting, Kansas City, December
8, 1990;

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Missouri State Bar Annual Meeting, Kansas City, September 19, 1996;
 Missouri State Bar CLE Seminar, Proving Damages in Catastrophic Injury Cases, "Hedonic Damages after September 11th and An Economist's View on Proving Economic Damages," Kansas City, April 19, 2002;
 Missouri State Bar CLE Seminar, Proving Damages in Catastrophic Injury Cases, "Hedonic Damages after September 11th and An Economist's View on Proving Economic Damages," St. Louis, May 9, 2002;
 Montana Trial Lawyer Association Fourth Annual Convention, "Proving The Intangible (Hedonic) Value of Human Life," Whitefish, July 23, 1993;
 Montana Trial Lawyer Association Seventh Annual Convention, Seminar of the Masters, Polson, August 1, 1996;
 Montana Trial Lawyer Association Spring Seminar, Scientific Evidence, "Making Tangible the Intangible: Loss of Enjoyment of Life, and Society & Companionship Damages," Billings, April 25, 2003;
 Nevada: Required Medical and Legal Education for the Traumatic Brain Injury Case, "9/11 Victim Compensation Fund Hedonic Damages: Implications for the State of Nevada," Las Vegas, October 25, 2002;
 New Hampshire Trial Lawyer Association, "Secrets & Strategies of Trial Law," Concord, October 8, 1993;
 New Mexico Trial Lawyers Association Annual Meeting, Economic Damages, Santa Fe, June 22, 1991;
 New Mexico Trial Lawyers Foundation Damages Seminar, Albuquerque, October 11, 1996;
 North Carolina, Brain Injury Association of NC, First Annual Trial Lawyers Conference, "The Use of Expert Testimony in Brain Injury Litigation," Charlotte, January 26, 1996;
 North Carolina, Brain Injury Association of NC, Second Annual Trial Lawyers Conference, "The Loss of Enjoyment of Life in Personal Injury - Hedonic Damages," Charlotte, January 24, 1997;
 North Dakota Trial Lawyers Association, Annual Meeting Trial Practice Seminar, Fargo, May 4, 1995;
 Ohio Association of Trial Lawyers Annual Meeting, Speaker and Expert Witness at Mock Trial on Wrongful Death Damages, Toledo, April, 1990;
 Ohio Head Injury Association, "Representing the Survivor of Mild Head Injury," Annual Seminar, Columbus, June 3, 1994;
 Pennsylvania: Philadelphia Trial Lawyers Association CLE Lecture Series, March 17, 1993;
 South Dakota Trial Lawyers Association Spring Seminar, April, 1989;
 Texas Trial Lawyers Association, Medical Malpractice Seminar, Wrongful Death Damages, Houston, May, 1990;
 Washington State Trial Lawyers Annual Meeting & Convention, Stevenson, July 11, 1998;
 Wisconsin Association of Trial Lawyers Annual Meeting, Wrongful Death Damages, Door County, July, 1990;
 Wisconsin Brain Injury 2nd Annual Seminar, "Identifying and Understanding Traumatic Brain Injury," Green Lake, May 31, 1997.

LOCAL PRESENTATIONS:

Alaska: Alaska Trial Lawyers Association, Anchorage, August, 1989;
 California: "Value of Life: Dismal Science from the Courtroom," Economics Department Workshop Colloquium, Pomona College, Claremont, April 17, 2006;

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Illinois: Chicago North Suburban Bar Association, May, 1988;
 Illinois: Chicago Advocates Society, June, 1988;
 Illinois: Northwest Chicago Suburban Bar Association, January, 1989;
 Illinois: Chicago Public Radio, WBEZ, February, 1989;
 Illinois: DuPage County, Bar Association, Chicago, May, 1989;
 Illinois: Sangamon County Trial Lawyers Association, Springfield, May, 1989;
 Illinois: McHenry County Bar Association, Chicago, May, 1989;
 Illinois: Chicago Bar Association Wrongful Death Seminar, Wrongful Death Damages, February, 1990;
 Illinois: Chicago Bar Association Torts Seminar, Defense Perspectives on Economic Damages, January 21, 1991;
 Illinois: Chicago Bar Association, Wrongful Death Seminar, February 11, 1993;
 Illinois: Chicago Bar Association Effective Direct and Cross-Examination of Expert Witnesses - A Demonstration, January 9, 1995;
 Illinois: Interstate National Corporation, "Cutting Edge Developments on Economic Damages - Defense Perspectives", Chicago, August 2, 1995;
 Illinois: Interstate National Corporation, "Cutting Edge Developments on Economic Damages - Defense Perspectives", Chicago, September 2, 1997;
 Illinois: Cassiday Schade & Gloor, "Catastrophic Damages...They're Back! - Limiting Damages After the Invalidity of Tort Reform," Chicago, November 18, 1998;
 Illinois: Law Bulletin Publishing Company, Legal Career Day, Economic Outlook for Lawyer Employment, Chicago, April 13, 2004;
 Illinois: Fox News Contributor WFLD TV, October 10 and October 15, 2008; February 25, March 24, April 10, April 20, June 17, August 3, August 26 and October 19, 2009;
 Michigan: American Radio Network, WFOX, Detroit, January, 1989;
 Michigan: Oakland County Bar Association Negligence Committee, Bloomfield Hills, November 5, 1996;
 Ohio: Hamilton County, Bar Association Seminar on Economic Damages, Cincinnati, January 31, 1991.

TELEVISION/VIDEO PRESENTATIONS

American Bar Association Tort and Insurance Practice Section Annual Meeting, "Hedonic Damages," San Francisco, CA, August 10, 1992;
 American Law Institute-American Bar Association, ALI-ABA Tape, "Hedonic Damages: Litigating the Loss of Enjoyment of Life," The Lawyers' Video Magazine, Vol. III Issue 20, Philadelphia, PA, December, 1991;
 CNN: Larry King Live, May 22, 1989.

PERSONAL BACKGROUND:

Born November 16, 1946, Rhinelander, Wisconsin;
 Graduated Nicolet High School 1964, Milwaukee, Wisconsin;
 Honorable Discharge U.S. Army, 1975;
 Member of Chicago Board Options Exchange, 1975-1978;
 Trustee, Wright Graduate University;
 Board Member, Wright Foundation.